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TRANSACTIONS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY,

HELD AT PHILADELPHIA,

FOR PROMOTING USEFUL KNOWLEDGE.

VOL. IV.—NEW SERIES.

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EXTRACT

FROM THE

LAWS OF THE SOCIETY RELATING TO THE TRANSACTIONS.

1. The Transactions shall be published in numbers, at short intervals, under the direction of the Committee of Publication.

2. Every communication to the Society, which may be considered as intended for a place in the Transactions, shall immediately be referred to a committee to consider and report thereon.

3. If the committee shall report in favour of publishing the communication, they shall make such corrections therein, as they may judge necessary to fit it for the press; or if they shall judge the publication of an abstract or extracts from the paper to be most eligible, they shall accompany their report with such abstract or extracts. But if the author do not approve of the corrections, abstract, or extracts, reported by the committee, he shall be at liberty to withdraw his paper.

4. The order in which papers are read before the Society shall determine their places in the Transactions, priority of date giving priority of location.

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Franklin Bache, M.D.
Isaac Lea.
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AMERICAN PHILOSOPHICAL SOCIETY

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OBITUARY NOTICE.

Since the publication of our last volume, death has deprived us of many valuable members. Among them we particularly notice the venerable Isaiah Thomas, the late president of the Antiquarian Society of Massachusetts, and the constant friend and benefactor of our institution; the Rev. Nicholas Collin, the last of the missionaries sent by the government of Sweden to preside over the Swedish congregations in this country; Zaccheus Collins, one of our vice-presidents; the Rev. Mr Schweinitz, of Bethlehem; Mr William Shaler; Mr Reuben Haines; Captain William Jones; Mr Edward Burd; the Rev. Charles J. Wharton, of Burlington, New Jersey; and the Rev. Joseph Hutchins, one of the original members of our Society, of whom only two at present survive.*

Among our foreign associates, we have lost, in Denmark, Professor Rask; in France, Vauquelin, Abel Remusat, Latreille; and, while writing this notice, we receive the melancholy news of the death of our learned associate, Charles Pougens, who closed his long and laborious life on the 19th of December last.

* The Right Rev. Bishop White, and Thomas Bradford, Esq.

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ERRATA.

Page 74, *line* 5, *for* divided *read* undivided

Page 75, *line* 11, *for* Ohio *read* Tennessee

Page 324, *line* 22, *for* (Plate XXVI. *c*) *read* (Plate XXVI. *b*)

Page 336, *line* 20, *for* whose *read* of whose

TRANSACTIONS

OF

THE AMERICAN PHILOSOPHICAL SOCIETY.

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NO. I.

Grammatical Sketch and Specimens of the Berber Language: preceded by four Letters on Berber Etymologies, addressed to the President of the Society by William B. Hodgson, Esq. Read October 2d, 1829.

LETTER I.

Algiers, 18 May 1828.

Dear Sir,

IN compliance with your desire, I have the pleasure to send you a grammatical sketch of the Berber language, as spoken by the Kabyles of this regency; or rather, I ought to say, a series of specimens of its grammatical forms and of its syntax. I hope to be able to present you with a grammar in the proper sense of the word; but that is not the work of a day, and it will require time and labour to accomplish it. All the moments that I can spare from my official duties and the study of the Oriental languages are employed in acquiring a competent knowledge of that curious idiom, which, from the phenomena it exhibits, may in many respects be compared to those

of our American Indians; at least, it appears to me that it possesses many of their polysynthetic forms, as you have denominated them; it will be at least a curious discovery, if it can be shown that the Berber appertains to that class of languages which was thought to be exclusively confined to our American continent; at any rate it is important to fix its proper place in the glossographic scale, and to ascertain the family to which it belongs. The more I investigate the subject, the more I am satisfied that the idiom of the Berbers is not the remains of the ancient Punic; but that it is the same language which was spoken by the inhabitants of the northern coast of Africa, at the time of the foundation of Carthage: much corrupted, however, by the introduction of Arabic, and perhaps, in this district at least, of Punic words and forms. The former, indeed, are so visible, that it is easy to perceive that they do not belong to the original language, from the peculiar structure of which they essentially differ. The latter, if any there be, it is not so easy to observe, as there are no remains of the Punic language sufficient to assist us in the inquiry. We may, perhaps, discover hereafter, some traces of it, by comparing the Berber of what was called Africa Proper, with the dialects of those parts where Carthaginian colonization did not extend. If the Punic idiom was ever incorporated to any extent with the language of the Numidians in the vicinity of Carthage, or in the countries under her dominion, it must have produced a marked difference between their dialects and those of the more distant tribes, which cannot escape the inquisitive eye of philologists.

My knowledge of the Berber language is, as you will readily perceive, very limited. But I have an intelligent Taleb, a native Kabyle, who is well skilled in that idiom, and in the literal and vulgar Arabic. Hamet, as he is called, is a young man, twenty-one years of age, belonging to the Emazzean tribe, vulgarly called *Beni Boojeiah*, and to the village of *Thegedoween*. He studied the Koran and Sidi Khalil for six years, at the *Mederes* or Theological School of Boojeiah, near which he resides. After having completed his course of divinity, he came to Algiers, where he was made known to me by a Kabyle, in the employment of this consulate. On the suggestion of Mr

Shaler, I engaged his services, and he now resides in the Consular house, at Mr Shaler's expense: such is the devotion of this excellent man to the cause of science, and to every thing that may be honourable or useful to our country.

Through the medium of the Arabic language, my young Maràbout instructs me in his native tongue; and the enclosed sketches are the first fruits of the instruction I have received from him. He has translated for me into Arabic several Berber tales; one of which I have selected, and send you, as well as a piece of Berber poetry, with literal translations, which I have been able to make into English by means of the explanations of my Taleb. I could not have done it without his aid. His mind is equal to the analytical labour which it required.

But I have found him particularly useful in my investigation of the origin of the Berber language. The plan which I pursued was to ascertain whether the proper names of persons and places which abound in the books of ancient history and geography, some of the latter of which have been preserved to this day, were in any way connected with the Berber idiom. If I should not only find that they bore some analogy to it, but that they had such significations as might naturally be supposed to be connected with proper names, a strong argument would be obtained in favour of the antiquity of this language and of its being aboriginal to the country. If those significant names extended east and west from one end of the African continent to the other, and from its northern coast south even to the Desart of Saara, where no Phenician colony can be supposed to have existed, it would be clear, independently of the inferences that may be drawn from the different structure of the two languages, that our Berber could not be the Punic, as Marsden and others have supposed; but was the language of the Autochthones, of the ancient inhabitants of the country, which the Phenicians who founded Carthage and their descendants were obliged to learn and to speak in common with their own, and which procured them the appellation of *Tyrii bilingues*.

Full of this idea, Mr Shaler and I immediately set to work, by turning over the leaves of Herodotus, Pliny, Strabo, Pomponius Mela, and other Greek and Roman writers; and having collected a conside-

rable list of geographical names, we hastened to present them to our Taleb, and were not a little delighted to find, that he recognised in many of them words of his own language, bearing such significations as might naturally be supposed to have been affixed to towns, rivers, mountains, &c. and that this was particularly the case with those names which still continue to be in use from the remotest antiquity, and which have at this day the same meaning which they probably had in ancient times. So far as we have gone, our success has exceeded our most sanguine expectations; so much so, that although our labours are by no means at an end, I cannot refrain from giving you some specimens of our progress. I regret exceedingly that Mr Shaler's departure deprives me of his powerful assistance; I feel, nevertheless sufficient courage to proceed in this interesting investigation, and hope to obtain still more convincing proofs of the fact that the Berber language is no other than the ancient Libyan, or Numidian, as you may please to call it.

Permit me then to lay before you some of those curious etymologies. They are too striking and too numerous to be the work of chance; and if the proper names which ancient historians and geographers have preserved should be found to be, as I have no doubt they are, of Berber origin, it cannot but throw some light on the history of Northern Africa and of mankind.

I begin with the word *Atlas*, the name which has been given from the highest antiquity to that chain of mountains which extends from the western coast of Africa to the confines of Egypt. As this name has come down to us through the Greeks, and is closely connected with the ancient mythology of that people, it seems natural to suppose that it is of Grecian origin; but I am rather inclined to believe that it is derived from the language of the people who inhabit those mountains, from whom most probably the Greeks received it, and, according to their well known custom, softened the harshness of its sounds to give it that euphony which their delicate ears indispensably required.

I cannot find that the Berbers of this day have any discriminating name for the chain of Mount Atlas. They call it *Adhraer**, the moun-

* In this word *dh* has the sound of δ in modern Greek, or of the English *th* in *then*, *that*.

tain, and in the plural *Edhrarin*. This word is written variously by the different authors who have treated of the Berber language. Hornemann writes it *Idrarn*, Ali-Bey *Adrer*, Dr Shaw *Athrair;* Mr Shaler's vocabulary has the spelling of two persons, one of whom writes *Adṛar*, and the other *Æderer*. This shows how differently the auditory organs can be affected by the sounds of a language greatly differing from our own. Then why could not the Greeks in those remote times have transformed *Adrar* or *Adhraer* into *Atlas?* Etymologists well know how easily *d* or *dh* is changed into *t*; and the liquid sound of *r* into *l* and *s*. I think it unnecessary to cite any examples to you, who are, no doubt, familiar with these transmutations or organic sounds. It might be said, perhaps, that when the Greeks invented the fable of the giant of these mountains, who supported the world upon his shoulders, they changed *Adrar* into *Atlas* by analogy to the words of their own language ἀθλεύω and ἀθλητὴς, expressive of his mighty struggles to bear the weight imposed upon him: but we must be on our guard against fanciful conjectures.

There can be no doubt but that this word *Adrar* or *Adhraer* is very ancient. Dr Shaw, in his valuable work on Barbary and the Levant, observes that it has been remarked by the ancient geographers, that the Atlas chain of mountains was called in their times *Dyris* or *Dyrin*, and *Adderis* or *Adderim;* and upon that he proceeds gravely to discuss a Hebrew etymology of these words which he found in Bochart, and an Arabic one of his own. But we have at last shaken off the yoke of that pedantic prejudice which formerly traced all etymologies to the Hebrew and the Semitic languages. We do not think that the christian religion will be less followed, or the Mosaic account of the creation less believed, because we cannot find a Hebrew origin for all the idioms of the earth.

These names, which are found in Strabo among the Greeks, and in Pliny, Solinus and Marianus Capella among the Latin writers, appear to me to be nothing else than the Berber words *Athraer*, *Edhrarin*, which, as I have said before, mean a mountain or mountains, differently corrupted from what they had been before when they were changed to *Atlas*. *Adrar*, *Athraer*, *Edhrarin*, *Adderis* or *Adderim*, are evidently the same word, with such variations as may naturally

be expected, when proper names pass from one language into another. There is surely not more, nor perhaps so much difference between them, as between *Antwerpen* and *Amberes**, *Mechlin* and *Malines*, *Lugdunum* and *Lyons*, Ὀδυσσεὺς and *Ulysses*. Καρχηδών and *Carthage*. And if the Romans or the Greeks changed *Adrar* and *Edhrarin* into *Adderis*, or in the accusative *Adderim;* why from *Adderis* might they not have made *Adras*, *Atras* or *Atlas?* The weight of probability, at least, appears to be in favour of this supposition. If it should be found correct, we may say of Mount Atlas, in the language of Virgil;

Æternumque tenet per sæcula nomen.

I should not, however, have advanced this conjecture, if it had not been supported by many more palpable etymologies of the proper names of ancient Numidia. I request your patience while I proceed to lay some of them before you.

The next that I shall adduce is the still existing name of *Thala*, a town celebrated in the history of the Numidian wars for its protracted siege, sustained against the army of Metellus, and for the sublime devotion of its citizens, who preferred committing themselves to the flames, rather than to the hands of their conquerors. See Sallust, Bell. Jugurth. 50—52. Thala is the parallel of Numantia, and the ancient Numidians probably rivalled the Iberians in warlike virtues and the love of independence. Tacitus, Annal. III. c. 21, mentions another town of the same name.

There are in this name no discrepancies of orthography to reconcile between the ancient and modern spelling. The Romans wrote it *Thala*, and precisely thus do the Kabyles pronounce it at this day. In their language it means *a covered fountain*, in contradistinction to an *open spring*, which is called *Aénser*. There is at this moment in the mountains of Boojeiah, a village of Kabyles, called *Thala Edhrarin*, that is to say *Thala of the mountains*, from the number or peculiar character of its fountains: the ancient Thala may have been so called for the same reason; and with this idea the following passage of Sallust presents a remarkable coincidence. "Apud

* The Spanish name for *Antwerp*.

Thalam, haud long à mœnibus, aliquot fontes erant:" this is the advantage which, he says, Thala possessed over the town of Capsa, where there was but one spring of water, una modò jugi aqua.

The custom of the Kabyles relative to these *covered fountains* is curious and interesting. A house is constructed over them, for their defence from the rays of the sun, from rain, and the pollution of animals. No man is allowed to enter these sacred precincts; women alone, who have ever been the "drawers of water" among uncultivated people, can tread the hallowed spot: if a man violate the sanctuary, punishment is inflicted, and an ox is sacrificed as a piaculum to the genius of the fountain. The practice of sacrificing goats, cocks, &c. to *Jin* or Genii is still observed by the Arabs and Moors. The ox is dissected by the *Amekran* or chief of the Kabyle *thedderth* or village, and by him distributed to the people, who attend in numbers on these occasions.

Illi se prædæ accingunt, dapibusque futuris.

Thus what may be indifferent to an aerial being, becomes acceptable to grosser humanity.

Ampsaga is the name of a river well known to geographers. Plin. l. 5, c. 2. Mela, l. 1, c. 7. It is now called by the Arabs Wed El-Kibeer, or the Great river, the same name which the Spaniards have corrupted into *Gaudalquivir;* but it continues to bear its ancient appellation among the Berbers.

On this river, Dr Shaw makes the following remark. "The Wed El-Kibeer or Great river, the Ampsaga of the ancients, falls into the sea, ten leagues to the east of Jijel. On one branch of the stream now called the Rummel, stands Constantine, the capital of the eastern province of Algiers, and which, as the ancient Cirta, was the metropolis of Numidia." Then the Doctor again quotes Bochart for a Hebrew etymology of this name. He might as well have sought in that language for the origin of the name of our river Mississippi. To me, the name *Ampsaga* appears to be derived from the Berber word *Sagar* which signifies *wood*, coupled with the particle *am*, like; so that *Am-Sagar* means the *river-like wood* or the *woody river*, a very

natural name to be given to a stream*; and the description of the Ampsaga by my Kabyle Taleb establishes at once its reason and propriety. Its banks, he informs, abound in pine, of which there is a considerable exportation. The cones of the tree are esteemed a salutary and pleasant fruit, and it is on the Ampsaga that the best is said to grow. He was shown the varieties of the pine-tree in Michaux, and identified that of the Ampsaga with the *pinus longifolia*. The generic name in Arabic is *Senubar*, and in Berber *Azumbey*. To prove that the ancient Ampsaga is still so called by the Kabyles, the following fact furnishes a conclusive argument: on one occasion I propounded some names of antiquity to my Taleb, to ascertain if they bore any meaning in his language. Among others, I mentioned Ampsaga, a river in the west, inadvertently confounding it with the Muluchah. He immediately replied that the Ampsaga was a river to the east of Bujeiah. In those mountains he resides. The manner in which this information was obtained leaves no doubt of its truth and correctness. Since the days of Pliny, therefore, the Ampsaga has preserved its name among the people who live in its vicinity.

To the etymology or signification of this name, as given by my Taleb, I can see no objection that can fairly be made. It may be said, perhaps, that because the banks of a river are covered with wood, it does not follow that the river itself is *like* wood, and that it is not probable that it would have been so denominated. This, undoubtedly, is not according to the modern idiom of our language; but it is not by this rule that we are to judge of that of the Berbers. And if we were even to do so, we should recollect that our adjective and adverbial termination *ly* (in the northern languages *lich*, *lyk*, *lig*.) is derived from *like*, and that it is used in many cases where it does not directly involve the idea of similitude. When we say *manly*, *womanly*, *lovely*, we mean *like man*, *like woman*, *like love*, and that is the true construction of this grammatical form; but when we say *greatly*, *unfortunately*, *steadily*, the idea of *like* disappears, although it may have been annexed to those words when they were first used. It is thus that forms of expression in a series of ages come to vary from their original

* The Arabs call a stream near Spaitla *Wed El Hataab*, i. e. River of Wood. Shaw.

meaning, and although they are retained they convey a different sense from that which their etymology would point out.

These compounds of *am* are very common in the Berber language in words implying some qualification. A person who has fine eyes is said to be *amtheit*. Now *theit* signifies *eyes*, and thus compounded with *am*, it might be translated by the barbarous English word *eyey*, as the French say of a person having a big belly, that he is *ventru;* and yet this word is compounded of *am*, which signifies *like*, and if it were to receive an etymological interpretation, it might be said to mean *like an eye.*

Thus the Berber prefix *am* has experienced the fate of our suffix *ly*, and whoever has reflected on the peculiarities of languages, will easily understand how this has happened, and will know that what appears to us strange and uncouth in the idiom of another nation, will sometimes, on a critical examination, be found to exist in our own.

Tunes or *Tunetum*, modern Tunis. The word *Thunes*, according to the paraphrase of my Taleb, means a *foreigner in peace and safety.* If we suppose *Tunes* to have been posterior to, or coeval with Carthage, then the erection of such a town in its vicinity might have been by convention between the Suffetes of that city and the Numidian princes. Or might not that name have been given to it in remembrance of the asylum granted to the fugitive Tyrians? The philosophic eye of Mr Shaler discovers many reasons in the relation of Carthage to the surrounding nations, why a free port for strangers might have been established in its neighbourhood. If the chronology of Herodotus be admitted, a post securing protection or perhaps franchises to the Greek and Phenician traders, was a certain means of attracting commerce. At any rate, this etymology of the name of Tunis has in it nothing improbable, and I should think, must be adopted, until a better one shall be discovered.

Sitifi or *Sitiphis* is another name also well known to the ancient geographers and historians; Ptolemy calls it *Sitipha Colonia.* In the middle ages it was the capital of a district or province called *Mauritania Sitifense*, and was at an early period the metropolis of that portion of the Cæsarian Mauritania. In Mayo's Tabula Romani Imperii, it

is marked at less than one degree south of Salde, the modern Boojeiah. The word *Esteef*, in Berber, signifies a white earth, chalk or clay. My Taleb informs me that this earth is brought from the vicinity of an ancient town of the Romans, and sold to the *Tulba* (Talebs) of Boojeiah, for the purpose of whitening the slates, or *Looha*, on which they write their lessons from the Koran. He has always understood that this decayed city was called *Esteef:* Dr Shaw says it is now called *Seteef.* That this place should have been so named from the peculiar nature of the soil where it stood, is not improbable; such denominations are common in our own country. The productions of the soil are likewise sometimes named after the places where they are found; thus *Creta*, chalk, was so called from the island of *Crete*, now Candia.

Augela, Augila, Augilæ (Herod. Plin.). This name, as ancient as the times of Herodotus, is still given at this day to an Oasis situate in the desert of Barca, in the dominions of Tripoli. Herodotus informs us that it abounded in dates, and so probably it does at present. There can be no doubt that this name, which was continued during so many ages, is of Berber derivation. In that language *agela* means *wealth, riches, possessions*, and a more appropriate name could not be given to a fertile tract of country situate in the midst of a sandy wilderness. It is analogous to the European names *Richland*, *Richmond*, *Richelieu*. It cannot be supposed to be of Punic origin; Carthage never carried her conquests to those desolate regions, and at the time when Herodotus wrote, about three hundred years after the foundation of that city, her language could not have extended to the deserts of Libya.

Tipasa (Ptol.), *Thapsus* (Plin.), *Capsa* (Sall.) *Capse* (Notit. Episc. Eccl. Afr.), *Capsæ* (Æthic.)*. My Taleb is of opinion that these different names are derived from the Berber word *Thefza*, sandy, gravelly, meaning a sandy or gravelly soil†. The two first derivations appear to me probable enough; but there might be some difficulty as to Capsa, Capse, Capsæ, where the letter *C* takes the place of *T*, with which other names begin. Yet, such changes are not uncommon in

* Leo Africanus speaks of a town called *Caphsa*, Biledulgerid, the walls of which had been razed to the ground, but the castle of which, in his day, was still standing. He says it was built by the Romans.

† M. Venture, in his Vocabulary, gives *Thefza* as the Berber word for *sand.*

the derivation of words. The town of Capsa, according to Sallust, was deficient in water, having but one single spring from which it could be supplied. Therefore it might have taken its name from the dryness of its soil. But that is of little importance, as the objection does not apply to the two first mentioned towns. There is at present, in the empire of Morocco, a town called *Thefza*, which you will find in Major Rennell's map, to which this derivation cannot be denied*. I do not find it mentioned in any of the ancient geographers. It may, nevertheless, be considered of great antiquity.

Ger is mentioned by Pliny, (l. 5, c. 1,) as the name of a river in Mauritania Cæsariensis. *Ger* or *Gher*, in the Berber language, signifies *between*, and is a very probable etymology of the name of this river. There is a town in the empire of Morocco, which at this day is called *Gher*. It lies to the south east of Fez, between two ridges of Mount Atlas. There is also Cape Gher on the western coast, between Mogador and Santa Cruz.

The name of the river *Tamda* (Mela, c. 5; Plin. l. 5, c. 2) may be derived from *Themuda*, a pond, or *Thabuda*, a kind of grass growing by the side of rivers.

Muthul (Sall.), from *Ameuthul*, like a hare, or hare river.

Asana (Plin.), from *Essan*, reeds.

Bagrada (Plin. l. 8, c. 14), from *Bagurda*, a mouse, *Mouse river*. It is now called Mejerda.

The following are names of towns:

Tisidium (Sall.), *Thisitha*, cows, the cow pens.

Thena or *Thenæ* (Plin. Strabo, Ptol. &c.) appears evidently derived from the Berber word *Tene*, dates: it is well known that this fruit abounds in North Africa.

Thelga, (the *Methelga* of Pliny) from *Thelga*, straw.

Siga (Plin. l. 5, c. 11), perhaps from *Sikka*, a plough share.

From the names which were known to the ancient geographers, I

* Leo Africanus says, that this town was built by the Africans, on the side of Mount Atlas, and that its walls are made of most excellent marble, which, in the language of the country, is called *Thefza*, from which the town took its name.

† With the formation *am*.

pass on to those which exist at present, but the antiquity of which is not well established. I take them in different parts of North Africa, from the Atlantic to the confines of Nubia, and from the Mediterranean to the Desert of Saara, inclusively.

In the empire of Morocco, we find a town called *Tenes*, at a short distance south west from the capital. This word in the Berber language means *worship, adoration.*

Tetuan, a well known sea port of the kingdom of Fez, is derived from *Tetowan**, which in Berber means *eyes.* Every where in the East, places are so called from *eyes*, or *fountains of water* (*ain*).

Tamara, on the coast, south of Cape Ger, appears derived from *Themara*, a mark, *e. g.* for shooting.

Tafilet, *Thafilelet.* *Afilelee*, in Berber, means red morocco leather. The place of its manufacture is called *Thafilelet.*

Azamor, on the Atlantic coast. This word means olive trees.

Tagarost, south east of Santa Cruz. *Thagarorth*, a fig tree.

Tregeget, in the mountains south east of Cape Blanco. This word means to quake or tremble.

Togda, on Tafilet river. *Thogada*, there is here.

In the country of the Mozabees (Ancient Gætulia) we find:

Berigan (*Ebrigan*), black.

Tsebid (*Thebid*), standing.

Wergela (*Oorgelara*), don't fly.

Engousa (*Egousah*), grape vines.

Gardeia (*Ghar-daiee*), come hither.

Tegorarin (*Thegororin*), fig trees.

In Saara and the country of the Tuaricks, on the route from Tata in Morocco to Tombuctoo, are the following towns, the names of which are all significant in the Berber language.

Taudeny, suspicious.

Tischét, a spider.

Aroan, satiated with food.

Twat (*Atwat*), a bird of the bittern kind.

* M. Venture writes it *thittaouin.*

Ezawen, a guard stationed, collector of tribute.

On the route from Gadames and Mourtzouk to Tombuctoo.

Telliaguess, shade of day, or three days journey.

Tuggurt, *Tegart*, cultivated ground. These words are probably corrupted from *Thegerth*, a garden.

From Mourtzouk to the Oasis of Jupiter Ammon, and to Bornou.

Temissa from *Themis*, fire, or *Themissa*, a species of grass.

Yzaghan (*Isnagan*), they fight.

Thegerhy (*Thegarth*), cultivated ground or garden.

On the coast of Barbary.

Seibouse, a species of small bird. This is the name of a river between Tunis and Constantine.

Zaine, another river, the ancient Tusca. *Zaine*, oak.

Tuckust, a mountain near Bona. This word means *perpetual snow*.

Tamendfust, the eastern cape of the bay of Algiers. *Thametefus*, the right hand.

Twunt, name of a river. This word means *portion* or *division*, and is here particularly appropriate, for this river separates the dominions of Algiers from those of Morocco.

Baryth (some write it *Baruth*) is the name of a cape west of Algiers, believed to be the *Promontorium Apollinis* of Pliny, l. 5, c. 2. The commentators have exhausted their ingenuity to derive this name from some word in the Hebrew or some other oriental language, signifying the sun, day light, or something analogous to the attributes of Apollo, forgetting that when the Romans gave names to towns or places in conquered countries, they did not translate those which the barbarians had before given them, any more than we translate in America the Indian names of towns, mountains or rivers. Thus New York is not a translation of the Indian name *Manhattan*, nor Philadelphia of *Coaquannock*. We sometimes preserve Indian denominations, but never translate them. It is the same with French names. We have corrupted *L'Anse à la Graisse*, into *Lancelot Grease*, but did not translate it into *Greasy Bend* or *Greasy Cove*.

Baryth is, in all probability, the name which the *native* Africans gave to the cape which the Romans called the Promontory of Apollo. This word, as I am informed by my Taleb, means in the Berber lan-

guage, *reconciliation after a victory.* It is therefore very natural to suppose, that cape Baryth was so named in ancient times, from a treaty of peace concluded on that spot, between some of the tribes or nations which in those days inhabited the country.

I have not been so successful in discovering the Berber etymologies of proper names of persons, as I have with respect to those of places. Whether it is that they have been disfigured by the Grecian and Roman writers, I cannot tell: certain it is that I have not yet been able to satisfy myself, except as to the name of Jugurtha, which, it appears to me, may be easily recognized in the Berber word *Jugurth*, which signifies a *crow* or *raven.* This name reminds me of those of our Indian chiefs, the bear, the wolf, the tortoise, &c. and is good enough for a barbarian king. *Corvus*, *Corvinus* were not uncommon names even among the civilized Romans. But of the names Juba, Syphax, Masinissa, even with the aid of my Taleb, I own I cannot make any thing. Still I do not mean to give up the pursuit. When I shall have acquired a competent knowledge of the Berber idiom, I may possibly discover what hitherto has eluded my research.

I am, &c.

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, ESQ.

LETTER II.

Algiers, Sept. 1, 1828.

Dear Sir,

Since I had the pleasure of writing to you on the 18th of May last, inclosing a sketch of the grammar, with various specimens of the Berber language, and at the same time communicating the result of my etymological researches, I have addressed to you several letters, some of which, at least, I presume, have reached you. I informed you in them of my slow progress in the investigations which I have undertaken on your flattering invitation; being desirous of convincing you of my disposition to comply with your wishes, and at the same

time yielding to a growing inclination to pursue a subject which is daily becoming more and more interesting to me. Philology is, indeed, an admirable science, and will amply repay the labours of those who make it the subject of their pursuits. But it is not permitted to me to attach myself exclusively to it. The service of my country, to which I have devoted my life, and on which depend my future prospects, demands the employment of the greatest part of my time in the performance of public duties, and in the acquisition of the knowledge which will enable me to render to my government the most efficient service. The departure of Mr Shaler, leaving to me in charge the affairs of this consulate general, of course requires that, by assiduous labour, I should endeavour to show myself worthy of the confidence with which I have been honoured, and no favourite study shall ever divert me from the more important path which duty prescribes to me. Still, as the study of the African languages is connected with the primary object for which I have been sent to this country, I think I may, without impropriety, employ my leisure moments in the investigation of the interesting idiom of the Berbers. Who knows whether it may not be hereafter of some important use in our relations with the Barbary powers?

I feel very sensibly the absence of Mr Shaler, whose able advice and assistance were of infinite use to me. I feel the want also of his well chosen library, which he has, of course, carried away with him. And to add to my misfortunes, my faithful Taleb, Hamet, has been gone some time on a visit to his native mountains. He has promised to return; but who knows what accidents or circumstances may yet prevent his fulfilling that promise? The loss of that intelligent Numidian would be to me irreparable. I have, however, his assurance, that, while at home, he will execute the literary plans which I have suggested to him.

The etymological investigations that I had begun are, therefore, necessarily suspended. Nevertheless, I have not been idle. I have now in my possession the *matériel* of a Berber grammar, an ample vocabulary, and a large collection of Berber tales, songs, and other specimens of that language. These will be arranged, methodized, and communicated to you or Mr Shaler in due time. I regret exceedingly

that I could not accompany my friend Hamet to the mountains of Boojeiah, and spend at least six months with him among the native Berbers. There I might have acquired a practical knowledge of their idiom, which would greatly have assisted me in my future inquiries.

Philologists, it is said, are too fond of generalizing their ideas, and in consequence are apt to build theories and systems, from which they can afterwards with difficulty extricate themselves. While I am on my guard against this danger, I acknowledge that I indulge sometimes in the propensity of my brother word-catchers, and that I try to obtain some general results from my laborious investigations. Being in this mood of thinking, it has occurred to me that it would be a curious and not unimportant subject of research, to inquire whether the Berber language, so different from others in its etymology and grammatical structure, stands alone of its kind along the mountains of North Africa, or whether it is not connected with the neighbouring idioms of Nubia, Abyssinia* and even of ancient Egypt? I am told that philologists agree that it has no kind of affinity with the Coptic: but I am not inclined to adopt implicitly the opinions of others; I should like to view the subject with my own eyes, and to form my own conclusions from well ascertained premises. The ancient writers, such as Herodotus, Strabo and Diodorus Siculus, were of opinion that civilization had descended the Nile, and had penetrated into Egypt from Ethiopia, and M. Champollion appears to have adopted the same sentiment. Why should not language have pursued the same course? Great light, it appears to me, would be thrown upon this interesting question, if we had materials sufficient to institute a fair comparison between the languages of Mount Atlas, the Desert of Saara, and the Oases; the various dialects of Nubia, Dongola, Sennaar, Darfur and Abyssinia, and what remains to us of the ancient Coptic. But, alas! much as I would wish to contribute my feeble aid to this interesting investigation, I am arrested in the outset for want of books, which are not to be obtained in this country. I should want at least, the Mithri-

* It is a very remarkable fact, that the aborigines of Abyssinia call themselves *Ghazian*, according to Bruce. He knew that they were a *shepherd people*, but was of course ignorant that the word *Ghazian* in Berber means *shepherds*. It should be written *Amghazian*, by the addition of the qualifying particle *am*, like. Hence, the names of the *Gheez* and *Amharic* or *Amgharic* languages.

dates, the Ethnographical Atlas of M. Balbi, Ludolph's Grammars of the Amharic and Ethiopic, Quatremère's Researches on the Language and Literature of Egypt, and a Coptic Grammar and Dictionary, if any such exist. But these books are not to be procured here for any price. I must therefore postpone satisfying my curiosity, until the means shall be afforded me of acquiring that preliminary knowledge, without which my efforts would be vain.

I have, however, had the good fortune to meet here with a copy of the most excellent work of M. Champollion the younger, entitled "*Précis du Système Hiéroglyphique des aneiens Egyptiens.*" I have read it with avidity, and was delighted to find in it some facts which seem to support the conjecture which I have ventured to offer to you. The first thing that has struck me, is some real affinities in the grammatical forms of the Coptic and Berber languages. *Nou*, *ne* or *noui*, and *ent* answer in Coptic to our pronoun *which*. In the Kabyle dialect of the Berbers, *cnoua* and *enta* have the same signification. *Yours* and *his*, in both languages, are expressed by *nek* and *nes; towards you* would be in Coptic *êroeek*, in Berber the phrase is rendered by *Ghâreek* or *Areek*. I should also observe that P. PH. are the masculine determinate articles, and T. TH. the feminine in the one language, and D. DH. are the masculine, and T. TH. the feminine determinate articles of the other, and that in both they are used as prefixes.

These, indeed, do not amount to much; but they appear to me to be at least sufficient to induce a further inquiry. So far, I am certain, that I cannot be taxed with a systematic spirit, or with being disposed to assume as facts, wild and fanciful theories. Whether what is going to follow will make me liable to that imputation, I leave you to judge. I offer it merely as conjectures; at the same time, I cannot but acknowledge that my imagination is tickled with my fancied discovery. I think I have found Berber etymologies for four Egyptian proper names. I give them to you for what they are worth.

Those names are *Ammon*, *Themis*, *Thebes* or *Thebais*, and *Thoth*. I shall proceed with them separately and in order.

1. *Ammon*. This, as you well know, is the name of the Egyptian Jupiter. It appears, however, that he was not of Egyptian, but of Libyan origin. Propertius, l. 4, eleg. 1, calls him *Jupiter Libycus*.

Lucan in his Pharsalia, lib. 10, v. 511, speaks of him also as a Libyan God, the only one that had a temple in that country. It is related in our books of mythology, that Hercules, crossing the Libyan deserts with his army, on his way to India, and perishing with thirst, implored the aid of his father Jupiter, who appeared to him in the form of a ram, and scratching the earth with his foot, a spring of water immediately spouted up. Thus, all the accounts we have of Jupiter Ammon point to a Libyan origin, and it is well known that his celebrated temple was not in Egypt, but in an Oasis, supposed to be that of Siwah, in the desert of Barca, where the Berber idiom is still spoken.

Yet the etymology of that name has been sought for almost in every language, except the Berber, which ought to have been the first recurred to. The most generally adopted is, that this word is derived from the Greek ἄμμος which signifies *sand;* because, forsooth, Ammon's temple was in the midst of a sandy desert. It was forgotten that the Oases are fertile spots, rich in vegetable productions, and abundantly watered. But it would seem that in the opinion of some learned men, the Greek and the Hebrew are the only legitimate sources of etymological research.

M. Champollion tells us, in the *Tableau Général* prefixed to his volume of plates, No. 39 *a*, that the name of Ammon, which phonetically is abbreviated by *Men*, appears to have been formerly pronounced *Amen* or *Emen*: if he is well founded in this assertion, the etymology of that word seems obvious, for *Aman* in the Berber language signifies *water*, and what name can be better appropriated to the God who first supplied the Libyans in their sandy deserts with that invaluable element? Is it not natural to suppose, that it was not the sandy Jupiter, but the Jupiter of water, who was honoured in that splendid temple which religious gratitude erected to him? Egypt, which owed her fertility to the waters of the Nile, must have adopted that worship at an early period, and the God of water might well have been placed at the head of the heavenly protectors of that country.

Whatever you may think of this etymology, it is certainly preferable to any one that may be derived from the Greek language; for, how can it be supposed that it was spoken or even known in Egypt in the remote times to which the worship of Ammon may be traced? M.

Champollion's researches have proved to us that it existed as far back as the reign of Sesostris. Therefore the derivation from ἄμμος must be considered at this day as utterly inadmissible, and no better one has been suggested that I know of. I proceed to the next Egyptian name.

2. *Themis.* The ancient Egyptians, according to Champollion, wrote this name *Sme**, with their phonetic characters. The Greeks wrote Θέμις. This goddess was the daughter of heaven and earth. In the Grecian mythology, she was the goddess of truth or justice. The Greek version by Hermapion, of her hieroglyph, found on an obelisk, is Ἀλήθεια. Now *Themis*, in the Berber language, signifies *fire*, the great elemental principle of nature, and the symbol of purity. The Romans and we derived *puritas* and *purity* from πῦρ *fire*, the purest of all the elements; why could not the name of the goddess of purity be derived from a Berber word having the same sound and the same signification? I submit this etymology to you; it may serve, at least, until a better one shall be found.

3. *Thebes, Thebais.* History records, that after the demise of Menes or Osiris, Egypt comprised four dynasties: Thebes, Thin, Memphis and Tunis. Thebes was the capital of Thebais, in what the ancient geographers call *Ægyptus Superior*, or upper Egypt. The following passage from Diodorus appears to me, if not fully to establish, at least to give great probability to the etymology which I shall presently mention. In the fifth book of his history, De Osiride et Iside, he says: Κτίσαι δέ φάσι τοτὲ περὶ τὸν Οσίριν πόλιν ἐν τῇ Θηβαΐδι τῇ κατ' Αἴγυπτον ἑκατόμπυλον· ἣν ἐκείνοις μὲν ἐπώνυμον ποίησαι τῆς μήτρος· "It remains to be said of Osiris, that he built a city of one hundred gates in Thebais, to which he gave the name of *Mother*."

The explanation of this passage can only be found by recurring to the Berber language. In that idiom, *Thebais* or *Thebaish* signifies the breast of a woman, *mamma*, while *Tamazegth* is the dug or teat of an animal. If by metonymy we say *mamma* for *mother*, may not the same license be allowed to Osiris? The celebrated Thebes, the hecatompylos of Homer, corresponded in magnitude and wealth to the

* M. Champollion, *Précis du Système Hiéroglyphique*, pp. 265, 267, 281, second edition, calls this Egyptian goddess *Tme* or *Thmei*, which brings this name still nearer to the Berber word *Themis*, which the Greeks have preserved without variation.

populous and fertile district of Thebais. That region and its splendid capital merited the appellation of *mother country* and *maternal city*, and in this sense, probably, the Greeks adopted, and we still use the word *metropolis*.

From Champollion we learn that monumental inscriptions prove *mouth* to have been the ancient Egyptian word for *mother*. He cites Plutarch in confirmation: and that author indeed says, that the Egyptians σημαίνουσι, indicate, designate *mother* by the term *mouth*. May not the word have been *thamouth*, *thamooth* or *thamorth*, which in Berber signifies the earth, our common mother, or *thamattooth*, a woman; or at least a derivation from some of these words? Who knows what changes have taken place in the Egyptian tongue, during so many centuries; what words, what synonyma, what proper, what figurative expressions may have been lost or substituted for each other in the course of so many ages? It is a remarkable fact, that the Berbers (in this district, at least) have lost their original names for *father* and *mother*, and now use the Arabic words for these parental relations. Nothing informs us that the city of Thebes was ever called *mouth* by the ancient Egyptians; but we know it was called *mother*, and the strong analogy of its name, and that of its province with the Berber words above mentioned, seems sufficient, at least, to put us on further inquiry.

4. *Thot* or *Thoth*. This god was the Egyptian Hermes or Mercury. *Theut*, *Thut* or *Thot* in the Berber language signifies the *eye*, and this appellation seems to me distinctly to characterise the winged messenger and plenipotentiary of the gods, and the vigilant guardian of Juno. The early Greek historians relate, that when Osiris set out on his expedition, with the view of traversing the globe, he left the administration of his kingdom to his wife Isis, and appointed *Thoth* to be her counsellor. Vigilance and prudence, therefore, must have been the qualities that recommended him to that high trust. The Egyptians, according to Champollion, ignorant of the author of their phonetic signs, attributed the invention to Thoth, who was esteemed the father of arts and sciences. With these qualifications, he might well have been entitled to the allegoric name of the *eye*, so well adapted to the objects of his celestial office.

I beg leave to trouble you with a few more observations.

The ancient city of Egypt, called *On* by the Hebrews and *Heliopolis* by the Greeks, was by the Egyptians named *Tadis* (Vide D'Herbelot). The Arabs, following the analogy of the Greek denomination, called this city *Ain-el-Schems*, the eye of the sun. This corresponds with the Greek Heliopolis. The import of the Egyptian *Tadis* would not have been known probably, but for Berber etymology. In this language, *Tadij* signifies the sun.

Apollinopolis is the Greek name of an ancient Egyptian city called by the early inhabitants *Etfu*. This is a Berber word, and signifies the *light of the sun*, whilst *Tadij* is the sun itself. This etymology corresponds with the Greek name of Apollinopolis.

Having attributed an Ethiopian or Abyssinian origin to the Berber language, I was pleased to find that the names for *God*, in two of the principal dialects of that region, were Berber words. They are *Egzar* and *Ezgar;* the one signifies a *river*, and the other a *bull*. The Nile and the bull Apis were objects of adoration to all Egypt.

In submitting these conjectures to you, (for they are nothing more,) I have only in view, sir, to point out the Berber language, as well as those of Nubia, Abyssinia and other adjacent parts, as sources from which it appears to me that much light may be thrown on Egyptian Antiquities; which have lately and justly become an object of general interest among the learned. If I have shown that there are at least probabilities in favour of this hypothesis, I shall have the satisfaction of having opened a path which may be hereafter trodden by others of greater knowledge and abilities than any I can pretend to, and I hope, with proportionate success.

I am, &c.

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, ESQ.

LETTER III.

Algiers, Jan. 20, 1829.

Dear Sir,

Since I last had the pleasure of writing to you, I have, in the absence of my friend Hamet, directed my inquiries to the various nations or tribes comprehended within the ancient Gætulia. These are denominated, in modern geography, Mozabies, Biscaries, Wadreagans, and Wurgelans; all of which communities are mixed with the Bedouin Arabs. The Mozabies inhabit an Oasis or *egzer* of the Saara, about three hundred miles south of Algiers; the Biscaries, to the south-east, inhabit a district bordering on the Saara, distant about two hundred miles; Tuggurt, the capital of Wadreag, is situated south-east from the Biscaries, one hundred miles; and Wurgelah is thirty leagues to the south-west of Tuggurt. The *egzer* of the Mozabies is perhaps in latitude thirty-one degrees north, and Wurgelah in the thirty-second parallel; a more particular description of these people and of their location, may be found in Shaw's Travels in Barbary, and in Mr Shaler's "Sketches of Algiers." As uniform orthography is of the first importance in relations of countries and places, I have adopted that of the Sketches, which I think exceedingly correct.

In the past history and present condition of Africa, the Berber language has been the great object of my research. It will afford you pleasure, sir, to know that I have ascertained it to be the native idiom of the Mozabies, Wadreagans and Wurgelans. The Mozabies, separated from these two by a trackless desert of eight days journey, are yet more distinct, in their moral and physical constitution. They are a white people, whilst the Wadreagans and Wurgelans are black. Their dialects are identically the same, presenting only modifications of the great language of the Atlas, such as are in all countries produced by habitudes and climate. The Kabyles, who are the Highlanders of Africa, call a man *ergaz;* the inhabitants of the lowlands of the Saara adopt the soft sound of *g* and say *erdjaz*. *Themis*, fire, they pronounce *Temis*. But amidst these various pronunciations, the Berber language is always to be recognised.

The structure and grammatical changes of these dialects, do not, as far as I have examined them, present any material differences. I denominate them Mozabeah, Eregiah and Wurgaleah, from the names of the tribes; and their language is not known among them by any other appellations. I incline to think that Hoest in terming the Berber of Morocco *Tamazegth*, and Shaw that of Barbary *Showiah*, were both led into error. The inhabitants of Wadreag call their language *Eregaiah*, the compound of Wad-reag, which means Oasis or Egzer of Ereag. *Wad* is the Arabic of the Berber *Egzer*. These people call their tribes respectively, Aith Emzab, Aith Eregaiah, Aith Wurgelah, like the Aith Abbess, Aith Toojah of the Atlas, and the name of their language is that of the tribe, in the form of the Arabic substantive. *Aith* answers to the *Beni* or children of the Arabs.

The Biscaries originally belonged to the Berber race, as the names of their towns indicate. They now speak the Barbary dialect of Arabic. How this tribe lost its ancient speech, is philosophically shown by Mr Shaler.

The Mozabies are a remarkably white people, and profess the Mohammedan religion. Differing in some points of discipline from the four great *Mezhebs* or sects, they constitute the *Thames* or fifth. Shaw, in relating that they are of the sect *Maleki*, appears not to have sufficiently examined the subject.

The Wadreagans and Wurgelans are a black people, possessing the moral traits of the Berber, and some of the physical characteristics of the Negro. They have woolly hair; skin of a bronze or dark brown colour, short nose, moderately depressed, with some cartilage in the apex, and thick lips. They are doubtless the same race as the Brebers and the Nubians of Browne. Malte-Brun is of opinion, that the Copts and other Negro tribes of Egypt are a mixed race. The Wadreagans are certainly not of the Caucasian family, as are the Mozabies and Kabyles. Their classification is left to naturalists.

These Negroes are unquestionably the Melano-Gætulians of Ptolemy. When I first saw a Wadreagan, and heard him speak Berber, my satisfaction was as great as that of the navigator, at the discovery of new land. And I have no doubt that this language is spoken quite to the southernmost part of the desert of Saara; for in Major Rennell's map

of North Africa, we find another Tuggurt and another Wurgela, the one in the twentieth, and the other in the twenty-fourth degree of north latitude, and these Berber names are sure indications of the Berber language. At any rate, I think we have here an additional elucidation of ancient geography. It is true that Dr Shaw supposes the Mozabies, and the Wadreagans to be the black Gætulians of antiquity; but as the former are peculiarly *white*, his generality fails in the particulars. He does not seem to have known the Wadreagans.

In the city of Tuggurt, the capital of Wadreag, there exists a distinct race of white people, called by the Mohammedans *Muhedjerin*. The explanation of this term is found in the Koran of Maraccius or of Savary, in the Surat of Women, 88th verse. It is there applied to those who emigrate from their country, and adopt the religion of the prophet, upon which condition the faithful may receive them as friends and companions. The ancestors of these people are said to have been Israelites. To the woolly head and black skin of the Wadreagan, they present the striking contrast of light hair and fair complexion. They are Mohammedans, speak only the Arabic language, have a monopoly of the offices of state, under that of Sultan, and are, in fact, the moneyed and influential men. Are they of the *Leuco*, or white Ethiopians of Pomponius Mela? Are they the lost tribes of Israel? The Falasha, a tribe of Jews discovered by Bruce in Abyssinia, still looked for the Messiah. At Tuggurt or *Jugurth*, Israel has forgotten Jerusalem; and yet the Jugurthans say, his right hand has not forgot its cunning.

The *Canarii* are placed by Shaw somewhere about the district of Zebe or of the Biscaries, and he affirms that they eat dog's flesh, as did their ancestors. Pliny speaks of the Canaries of Morocco, and I recollect to have read of them in the Annals of Tacitus; but I am ignorant that there were such people in Gætulia. It is certainly true, however, that the Biscaries and the Wadreagans make great use of dog-flesh, medicinally. In bilious affections to which they are subject, this meat and its broth, spiced with ginger, cinnamon and pepper, appear to be a sovereign remedy. It is emetico-cathartic, and induces copious diaphoresis, exhaling a fetid odour. This, I suppose, is rather the effect of the spicy infusion, than of the chemical properties of canine viscera.

The geographers and historians of antiquity, describe people and places in Africa, some of which may never be identified; and of others, the existence, at any time, is not probable. Until I had compared their wonders of the distant regions of this continent, with the discoveries of modern science, I regarded them mostly as legendary tales. I now believe, their reports were in general founded in truth. The *fons solis* at the oasis of Jupiter Ammon is said, by Herodotus, to have been boiling hot at midnight, and cold at noon. Belzoni found that an extraordinary change of temperature at these periods, produced a differential heat, mistaken by the ancients, to be thermometric. I believe there was a nation, of whatever name, called by Melas *Atlantes*, who cursed the sun at his rising. Until the introduction of Mohammedanism, the Wadreagans may have thus done. A band of these people having wandered to the mountains of Boojeiah, were asked, why they had left their homes. They replied, *the sun ate us up.* The existence of headless Blemmyes, with eyes in their breasts, is too great a tax on my credulity, but it seems true of the Troglodytes, that they chatter rather than speak—*Strident magis quàm loquuntur.* Horneman has proved this; and Hadjees from their pilgrimage to Mecca, at this day, recount the same thing, adding that these men have but one joint in their legs. If this be true, that country which is said to have been once inhabited by headless men, satyrs and retrogressive beasts, is yet the land of "Gorgons, hydras, and chimæras dire."

At every successive step of my investigations, new proofs accumulate in favour of my hypothesis, that the Berber is the original language of all North Africa, including the Egypts and Abyssinia. The dialect of the Tibboos now attracts me, like a *mirage* of their desert; like to that, I hope my idea of their speaking the Berber language, may not prove an illusion*. The ample page of this country's history is rich with the spoils of time. It is matter of lamentation, that the Roman legions should have collected so few monuments to attest the existence of this ancient and warlike people. Posterity will admire the enlightened councils of our republic in preserving the records of our red men. But where are the enduring medals to perpetuate those

* But see Letter IV, p. 28.

manly forms, for which after ages will inquire with intense curiosity. The portraits now deposited in the war office will be effaced, before perhaps the Indians themselves are extinct. They now stand, as the "Last of the Mohicans," like blazed trees, in a clearing of white men.

I am, sir,

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, ESQ.

LETTER IV.

Algiers, 1st April 1829.

Dear Sir,

I understand from Mr Shaler, that I am to be called home at the beginning of next year; but little time, therefore, remains to me to pursue my favourite studies. I wish very much, when the new consul shall arrive, to be able to proceed to Tunis, Tripoli and Alexandria*, where I think important discoveries may be made. At Cairo, which is the Babel of the universe, I could procure vocabularies, and information about all people and tongues, to the utmost verge of Ethiopia. At Tripoli, I would converse with the inhabitants of Cyrenaica, Tibboo, Ghadames and the mountains of Gharian, which contain a numerous population of Berbers and Jews. Near the Syrtis Minor, are the Libyo-Phenicians of Strabo. At Tunis may be found nations of those districts of North Africa, more immediately under the jurisdiction of that Beylick, particularly of Beled-ul-jereed. Beyond anthropology, I propose not to conduct my inquiries. Before I return home, it would be well that I should see *multas urbes et homines*. Plutarch tells us that he learned languages from *things*.

In my last letter, I endeavoured to illustrate the Egyptian mythology by the Berber language. That theology is the parent of the Greek and Roman. I have explained my derivation of the proper names *Ammon*, *Themis*, *Thoth* and of *Thebes*. To these I now add *Osiris*, *Isis*, *Atoo* and the name of the celebrated *Nile*.

* This wish was not fulfilled.

Osir-*is*, in Berber, means *an aged venerable man*, and *Isis* signifies *daughters*, in the plural number, the singular being *Ile**. Champollion says that the termination *is* was added by the Greeks to the names of Egyptian divinities. I shall not now review what has been said of the interpretation of these two names by Kircher, Jablonski, &c. &c. who make the former to represent the sun, and the latter the moon. All the symbols of Osiris and Isis appear to me to accord with my interpretation, the venerable beard, staff and *flagellum* of the one, and the numerous mammillæ of the other. They represented also the organs of generation. In fact, sir, I believe that *Osir* was nothing more than an Arab *Scheikh*, subsequently placed among the national divinities.

Atoo, according to Champollion, signifies, in Coptic, the *universe;* in Berber it means the whole aerial space†. This confirms what Macrobius asserts of Egyptian theology: "Ægyptii, per nomina Deorum, universam rerum naturam, juxtà theologiam naturalem, intelligebant." On this supposition, it is also probable that Ammon signified *water*, and Themis *fire*.

I now come to the famous river *Nile*. In the first book of either Herodotus or Diodorus Siculus, the Egyptians are said to have called the Nile *Oceanus*. *Ile* or *Illee*, in Berber means the sea‡, which may have been changed into *Nile*, thus: the inhabitants of Egypt probably gave to their sacred river some appellation, such as the father or fountain of the sea. With this supposition, *Nile* would be the genitive inflection, "*of the Sea*." If the ancient historians, whom I cannot now consult, report correctly, that the Nile was called *Ocean*, then the sea, with the determinate masculine article, would be *Dhile*, which in the softer enunciation of the Greeks, might have been made *Nile*. The

* Mr Shaler, in his vocabulary, gives the word *amgar*, *amegat* for *old;* and M. Venture translates *emgar*, feminine, *temgar*, by *vieillard*. He gives *tagchicht* for *daughter*, and *thiahhdain* for girls. Mr Shaler has *illi*, *elli*, for *daughter*, in which he agrees with my Taleb. These differences may be accounted for by the variety of dialects and the richness of the language.

† M. Venture gives for the word air, *adou*, which is nearly the same. This word is not given in Mr Shaler's Vocabulary.

‡ The same author gives *lebhar* as the Berber word *lamer* for (the sea). But M. Langlès, his editor, in a note (p. 438) observes that it is an Arabic word. So that *Ile* or *Illee* appears to be the genuine Berber. Mr Shaler gives *bhar* or *bahar*, also Arabic.

Berber word for *sea*, I obtained after a long search, from a native of the island of Zerbi or Djerba, the ancient *Meninx*, in the Syrtis Minor. The inhabitants of this island were the Lotophagi of Homer. They speak the Berber language less mixed with Arabic than the Kabyles of Algiers.

The structure of the Coptic language justifies the preceding derivation. From Champollion I learn that "en Copte, la préposition *n* remplace le cas génitif des Latins." (Précis, p. 129.) This is another coincidence to be added to what I said in my preceding letter on the similarity of forms between the Coptic and the Berber.

To derive the appellation Nile from Hebrew or Arabic roots, as has been done by Pococke and other learned men; would be to suppose those to have been idioms of Egypt anterior to the flood. I have in my possession a valuable Arabic manuscript of Abou Abbas Ahmed Ben Josef, which he calls *Akhbar-ul-dowwel on Athar-ul-Ewwel*, in which is found a history of Egypt prior to the deluge, and the Nile was so called at that remote period. Whence Abou Abbas obtained his information would be curious to know; for no records or traditions of the condition of this globe previous to the grand cataclysm, can be safely received but from the Genesis of Moses.

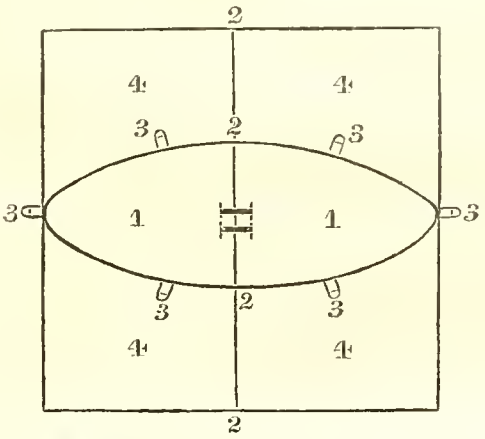
The Geographical Society of Paris, at its institution in 1823, published a series of questions upon this part of Africa, the greater part of which I hope I may be with time prepared to resolve. I have projected a map of North Africa, including the Saara, in which I have found populous oases, I believe heretofore unknown, or which have been comprehended within more general divisions of that desert. On this map I have described itineraries from the Atlantic to Fezzan, along the northern border of the Saara, and I have traced the lines of march of trading Kafilahs through different sections of this vasty waste.

I have conversed with the inhabitants of Dra, Tafilet, Fighig, Twat, Tegoraza, Tedeekels, Wurgelah, Ghadames, Djerbi, Gharian, and have found the Berber language radically the same in all these places. The Tibboos are really distinct people, as a comparison of their words will show.

English.	*Tibboo.*	*Berber.*
Fire	Wenee	Themis
Water	Ee	Aman
Air	Abonoo	Atoo
Earth	Pestaboo	Thamoorth.

I think I can account for this fact geographically. I have various vocabularies; among others, of the *Tergiah*, or language of the Tuaryks of the Saara, which is pure Berber. *Terga* is the singular of *Tuaryk*.

There is a political phenomenon in the social history of the Berbers, which is worthy of the attention of the antiquary and of the philosopher. The towns of *Ghadames*, *Wurgelah*, *Eghwaat*, (*Lowaat* of Shaw) and *Tlemsan* are, each of them, divided into two, three or four distinct communities or tribes, who war with each other like the Kabyle classes of the mountains: to these towns there is a common wall; but each community has its particular section enclosed by an interior wall. Since the domination of the Turks, the Berbers have abandoned Tlemsan. Captain Lyon made known this curious fact in relation to Ghadames, and Shaw to Tlemsan; but I believe I have first noticed the political constitution of Wurgelah and Eghwaat. The Geographical Society of Paris thus remarks upon the subject: "ce fait étant important pour toute l'histoire de l'antiquité, on est prié d'obtenir le plus de détails possibles sur l'origine, la nature, les conditions et les résultats de cette union." The town of Eghwaat is built in this manner:



1. 1. The two tribes. 2. 2. Wall of partition and gate. 3. 3. Respective gates. 4. 4. Respective gardens enclosed by walls.

The town is elliptic, but the gardens attached to it form of the whole a parallelogram: the middle gate is closed in time of war.

The Beni Mozab are called in their language *Aith eougalan*, or the tribe of the austere, which has been rendered into Arabic by Beni Mosab or Mozab. Here then, sir, we call back these people to the Berber charter; they had almost lost for ever their very name. Their sect of Islam comprehends the inhabitants of Djerbi, of the mountains of Emfus, and of Oman on the Persian Gulph. In all essential points of doctrine they are Wahhabees, but differ from them in two articles of speculative divinity—the essence of God, and the nature of future punishments. A third point of difference is the law of inheritance. Their schism dates from the fifth century of the Hegira.

With a view to the future advantage of the infant colony of Liberia, I have extended my inquiries to the mountains of Kong. Of the *Soing*, the principal dialect, I have a vocabulary.

I have now laid open to you, sir, the wide field of my researches. I have attempted something towards its exploration, but much will remain for others. The most philosophical disquisition on the early inhabitants of Africa that I have yet seen, is that of the learned Von Heeren, entitled, "Ideen uber die politik, den verkehr und den handel der vornehmsten Volker der alter Welt," which deduces powerful arguments from the Berber language, although so imperfectly known. This encourages me to hope that my philological studies may contribute something towards unrolling the mysterious scroll of man's history.

I am, &c.

WILLIAM B. HODGSON.

PETER S. DUPONCEAU, ESQ.

P.S. I enclose some remarks respecting the Tuarycks, which may not be unworthy of your attention.

REMARKS UPON THE TUARYCKS.

These great and warlike people were first described by the judicious traveller, Frederick Hornemann, who, in the year 1798, passed from Cairo to Fezzan. Captain Lyons, Messrs Denham and Clapperton, and the lamented Major Laing, subsequently travelled through or along the borders of the Saara, and have represented this nation as distinguished by strong physical traits and manly characters.

The Tuarycks inhabit that extensive portion of the Saara circumscribed on the east by Fezzan and Tibboo, south by the Negro nations of Bournou, Haoussa, Gouber and Tombuctoo, and on the west by the oases of Tedeckels and Twat. The country of the Mozabis, Engousah and Ghadames are their northern limits, beyond which they never proceed. As Nomadic tribes, they are found in the vicinity of all the Negro population, from Tibboo to Tombuctoo, where they rove for the purpose of kidnapping. The number of slaves sold in the northern markets of Mourtzouk, Ain-Lalal, Ghadames and Mozab by these *Anthropoklephts*, must be very great; for, of the slaves with whom I have conversed at Algiers, the larger part were ravished from their homes, while young, by these bandits of the desert. Among the Negro tribes, they bear different names: as *Sergoos*, they are known every where; on the borders of Fezzan, at Aghadez and in Haoussa, they are called *Kelluvi;* at Sackatou and among the inhabitants of Gouber, they are known as *Etesan;* and at Tombuctoo and along the Quorra or Niger, as *Oulemidan*. By the natives of Haoussa they are also denominated *Ouzanoroah*, which has the import of the Arabic word *Kafir* or infidel. *Kilgaris* is another name which they bear in the district between Aghades and Soudan.

The Tuarycks are a white people of the Berber race, and are Mohammedans of the sect of Maleki. In regard to the practice of religion, it is believed they are quite as indifferent as the Kabyles of the Atlas; whilst they are superstitious, and greatly addicted to the use of amulets or *herzes*, prepared by their marabouts. These independent tribes are remarkable for their commercial habits and warlike pro-

pensities. Their *kafilas* or caravans carry on the commerce of Fezzan, with Ghadames, Twat and Soudan; and Mourtzouk derives its wealth and importance from their enterprise. It was this trading impulse which induced Hornemann to suppose that the Tuarycks had pushed forward colonies to Augela and Siwah, and perhaps to Ghadames and along the northern fringe of the Saara to the empire of Morocco. This idea was suggested by the identity of language of the Siwahans and Tuarycks; but the former, rather than colonists, are believed to be the descendants of the ancient Libyans, the aborigines of the great and lesser oases; and the Tuarycks are doubtless of the same stock.

The etymology of the appellation *Tuaryck* gives to this subject a new aspect. This word in the Berber language signifies *tribes*. The singular form is *Terga*, which makes Tuerga in the plural, or, as it is commonly pronounced, *Tuareg*, and with our orthography *Tuaryck*. To one man *Tergi* is applied, and *Tuaryck* to the nation. I speak advisedly, for I have the authority of Twatters who have had long intercourse with these people. If one be asked what language the Tuarycks speak, he will reply *Tergeah;* in the same analogy *Arabeah* is spoken by Arabs and *Kabyleah* by Kabyles. I had long thought that Tuaryck was a Berber term, and accident discovered its signification, which had been refused to repeated inquiries. I had requested my Taleb to render into Berber, some Arabic composition in which occurred the word *shuub*, tribes. When the Taleb translated it by *Tuerga*, my satisfaction was extreme, because henceforth it will serve to illustrate the history of this interesting nation.

The Berber term Tuaryck corresponds with the Arabic Kabyle, or with a more literal orthography, *Kabail*, both of which signify tribes, borders or families. The important fact is hence deduced, that the Kabyles of the Atlas have an appellation similar to the Kabyles of the desert; and they are the same people, as will be proved by a comparative vocabulary.

These names were not given to the Numidians or Gætulians by the ancient historians. As the origin of Kabyle is positively known, that of Tuaryck may be inferred by analogy. At the period of the Saracen invasion, the Arabian caliphs found the Berbers unimproved in their condition, as represented to have been under the government of Sallust.

neque moribus, neque lege, neque imperio cujusquam. These more cultivated sectarians of the Koran applied the term Kabyle to the unlettered and pagan Mauritaneans. With a like sentiment of superiority, the stationary inhabitants of Fezzan and Twat may have denominated Tuaryeks, the Nomades of the desert, and so fully has the name been adopted, that a district of the Saara is called *Terga*, according to Leo Africanus.

The Kabyles of the Atlas, in assuming this appellation, seek to give to it an honourable derivation. When the Mohammedans preached to them the first article of Islam, that there is no God but one God, and that Mohammed is his prophet, they replied *Nekabel*, we receive. Hence, they affirm, comes the term Kabyle. The mountain of Fuss near Tripoli was so called, say the Berbers, for the same reason, to indicate the readiness with which they embraced the religion of the prophet. *Fuss* in their language signifies *hand*.

The aborigines of our country are called Indian tribes; and if the man be an Indian, it is seldom asked whether he is a Chippeway or a Choctaw. The Fezzanians in denominating the surrounding tribes Tuarycks, and the Moors those among them Kabyles, have done what we have in a similar case. We have adopted the epithet *Indian*, which is not known to our indigenous population, and by which they are in no wise characterised. It would seem that the human mind acts by similar laws in all countries.

Are the aborigines of North Africa known by any generic name; or do the various tribes bear, each, a particular appellation? To the first part of this question it is answered, that the term *Berber*, of which the plural form is *beraber*, is universally acknowledged by the original population of this country. I have conversed with natives of Morocco and of Tripoli, and every where the earlier Africans call themselves *Beraber*. The etymology of this word cannot now, perhaps, be ascertained; but its origin is probably anterior to the Roman domination. By the Arabian geographers and historians, *El Wardi*, *Mūsoudi*, and *Achmed Tchelebi el Karamani*, the Berbers are distinctly mentioned as occupying the oases, and also various parts of North Africa. Leo Africanus proposes two derivations; the one from *Ber* signifying desert, and the other from *Burbrera, to mutter*. As etymologies are intimately

connected with history and various local circumstances, of which I am ignorant in relation to Berber, its derivation remains sub judice. Gibbon asserts that this word is of Greek origin, being the corruption of the epithet βάρβαροι, which was applied to all foreigners.

The second part of the question is answered by the names of numerous tribes which have been published by Hoest, Chenier, Abadea and Jackson, inhabiting the empire of Morocco, and by Shaw, of those belonging to Algiers. To all of these individual names, the word *aith* is prefixed, which corresponds with the Arabic *beni* or *welled*, signifying sons or children. The tribe of Beni or Welled Ammer, as among the Arabs, would be called Aith Ammer by the Berbers. The term *aith* would be rendered into Arabic more literally by *ehl*, meaning companion, family, people; for the Moors say *chli darek* the people of your house, and the Kabyles for the same phrase say *aith conakhameek*. This peculiar Berber denomination pervades this continent. The Beni Mozab, are, in their own language, called *Aith oodjelan;* and I believe, that instead of the Arabic names which they never fail to assume before strangers, the Berbers will every where be found to have their peculiar appellations. Among the Tuarycks of Hagara, who inhabit the interior of the Saara, "in the deep bosom of that ocean buried," there are tribes called Aith el Hadj, Aaith el Noah, Aith Emgat and Esukemaran. The two first names, *Hadj* and *Noah* indicate how great has been the influence of the Koran and its language in obliterating the very nomenclature of families. In the oases of Tedeekels, Twat, Tegorara and Fighig, the epithet *aith* predominates. The late major Laing traversed the great desert from Ghadames to Ain Salah, the principal town of Tedeekels, and thence passed through the desert of Tenezarof to Tombuctoo. If the papers of this distinguished traveller should ever be recovered, much important information will be had, in relation to the Tuarycks and Berbers. But if his orthography be so incorrect as that of *Ensala*, which should be *Ain Salah*, a subject already obscure will become impenetrably dark. The Quarterly Review of last year contains some notice of major Laing's travels among the Tuarycks. A vocabulary of their language, which has been long esteemed a desideratum, I herewith present.

	Singular.	*Plural.*
Water	Aman	Amanan
Fire	Temis	
Sun	Tafookt (literally the light of the sun)	
Moon	Ayur	Ayuran
Star	Ithree	Ithran
Man	Erdjaz	Erdjazan
Woman	Tamtot	Khaleth and Tesidnan
Head	Ikf	Ikfowan
Eye	Tëit	Tetouan
Hand	Afuss	Efessan
Dog	Aidee	Edan
Cat	Amshish	Emshash
Bull	Azger	Ezgeran
Cow	Tafoonest	Tezith
Bread	Agrom	
Meat	Aksoum*	
Salt	Tesint	
Country	Tamoort	

This vocabulary is a specimen of the Berber language, wherever it is spoken. The only difference betwixt the highlander and the inhabitant of the plains, in this respect, is that the former pronounces *th* at the beginning and end of words, which the other enunciates *t;* and the hard sound of *g* becomes the softer *dj:* i. e. *Themis* makes *Temis*, and *ergaz* is pronounced *erdjaz*. The grammatical structure of the language is every where the same. The proof is therefore conclusive, that the Tuaryeks and the Kabyles are one people, and that the great Libyan race still exists in Africa: its language has not been effaced, nor has its character degenerated; its independence has been preserved amidst invasions and corruptions, and it now commands the proud eulogy of Rome,

——————— genus insuperabile bello.

* May not the name of the ancient town of *Axum*, in Abyssinia, be derived from this word? The Abyssinians are great *meat-eaters*.

The aboriginal tribes of North Africa possess no literature, nor any monumental records to attest their history. What has been transmitted by Greek and Roman writers is an imperfect sketch, and embraces but a short period anterior to the Christian æra. Where tradition fails, the early condition of a people may be read in the unerring page of human speech. From the language of the Berbers may be drawn striking illustrations of the religion, the political and social state of Egypt and Libya. The papers that have been submitted to the American Philosophical Society prove the antiquity of this language.

> Quam non ——————— innumerabilis
> Annorum series, et fuga temporum
> Possit diruere.

If this idiom be not the Libyan, it is confidently asked, by what mighty catastrophe has that language been lost? Since the period of the first Punic war, we are accurately informed of all the invasions which have successively swept over this continent; and of the Saracen alone does any vestige remain. When the learned Marsden discovered an affinity betwixt the Berber of Atlas and the dialect of Siwah, the remarkable fact was immediately used by the philosophic writer Heeren*, to solve the question, who were the Libyans? He does not hesitate to assert, that philology has proved the Tuarycks to be the descendants of that ancient people. Heeren profoundly investigated the state of religion and commerce among the earlier Egyptians and Libyans: with what satisfaction would he have learned that the extensive worship of Ammon was that of *water*—as the annual procession of priests bearing this god in a *boat* sufficiently proves—and that the divinity of Themis represented *fire*.

This argument for the African origin and remote antiquity of the Berber language, is believed to be irrefragable. The Quarterly Review of 1826 renews the hypothesis of Mr Marsden and the erudite Langlès, that it may be a dialect of the ancient Punic, and translated to Africa by the founder of Carthage. The analogy between the

* Ideen über die Politik, &c. der vornehmsten Völker der alten Welt.

Berber, and the Semitic language is faint, compared with the numerous and prominent traits of character which distinguish them. It has already been shown by Mr Du Ponceau, that the Carthaginians could not, in the nature of things, have imparted their language to this continent; the Punic origin of the Berber may therefore be abandoned.

Were additional proof required, the Berber names of individuals might be adduced. No connection subsists between them, and those of the Carthaginians recorded in history. These appellations have been obtained with great difficulty; for the Kabyles bear Arabic names, as well as Berber, and these they conceal with pertinacity among the Moors, conceiving them to be contrary to the true faith.

Men's Names.		*Women's Names.*	
Wetoweet	*Bat*	Thafookt	*Light of the sun*
Aketot	*Talkative*	Thezeree	*Moon-light*
Azetot	*Dove*	Thefeddoonith	*Above the earth*
Abeetot	*Short coat*	Thezemerth	*Lamb*
Serrefref	*Fearing the wind*	Thunes	*Tunis*
Shenoof	*Hair-lipped*	Thesomtha	*Pillow*
Amshesh	*Cat*	Thezizivceth	*Bee*
Anefses	*Runner*	Theskooth	*Partridge*
Ahenooh	*Neigher (a horse)*		
Honouf	*Crooked-nose*		

These names, compared with the Phenician Asdrubal, Hannibal, Hamilcar, &c. present no similarity, which latter may be derived from the Hebrew, a cognate dialect of the Phenician. Our North American Indians surpass the Berbers in the grandiloquence of men's names, but more poetic appellations for women exist in no language.

Important facts for the history of North Africa have been derived from the Berber; ancient mythology has also received plausible illustrations from it. The complete investigation of this idiom may facilitate researches in other languages; for with the Coptic it has a positive affinity. Comparative philology, which was equally neglected by the sagacious Greek and the haughty Roman, is in modern times a science indispensable to the accurate historian.

WILLIAM B. HODGSON.

Algiers, June 10, 1829.

A GRAMMATICAL SKETCH OF THE BERBER LANGUAGE.

I. Of the Alphabet.

The Berber language, having no literature, has properly no alphabet of its own. It is written nevertheless by means of the Arabic characters, which are generally used for that purpose. But as the sounds of the two languages do not exactly agree, some alteration has been made in the Arabic alphabet, in order to adapt it to the representation of the words of this idiom. Of the twenty-eight letters that compose it, the fourth character *tsa*, numeral 500, has been excluded, and five more have been added, three of which, the *tchim*, the *zhe*, and the *ghâf*, have been borrowed from the Persian alphabet, in order to represent the sounds of the English *ch*, the French *j*, and the guttural sound of *gh* in the Flemish or Low Dutch language; the Greek ϴ has also been added to express the sound of the English *th*, and a new character, composed of the Arabic *ta* and *sin* combined together, serves to express the sound given by the Germans to the letter *z*, or the combination of the letters *ts*. Thus the Berber alphabet may be said to be composed of thirty-two letters.

II. Of the Article.

The definite article is sometimes supplied by the affixed particle *Ees—Eeskhamsa*, the five (persons).

Sometimes also *th* is prefixed to and suffixed by substantives. Thus *zerbia*, a carpet, becomes *thezerbeeth*.

In words borrowed from the Arabic the article *el* is generally preserved, or rather, the letter *l* is prefixed to and incorporated with the substantive. Thus *el-kitab*, a book, becomes *lektsab; el-bahar*, the sea, is changed into *lebhar**.

* M. Venture (p. 420) says that the Berber has no definite article, which, in general, is probably true. Speaking of Arabic words introduced into that language, he says, (p. 416,) that the Arabic article *el* is changed into *t* prefixed and suffixed, or the syllable *nit* is placed

In general, however, Arabic words, when adopted by the Berbers, undergo the changes required by the analogy of their language.

Arabic adjectives are made Berber, by assuming the prefixed particle *dha*. Thus *djedid*, new, becomes *dhadjedid*.

III. Declension of Nouns Substantive.

	Singular.	*Plural.*
Nom.	Argaz, *a man*	Ergazan, *men*
Gen.	Awergaz, *of a man*	Ayergazan, *of men*
Dat.	Eewargaz, *to a man*	Eeyergazan, *to men*
		Ghoor yergazan, *to the men*
Accus.	Ergaz, *a man*	Ergazan, *men*
Voc.	Ai-Ergaz, *O man*	Ai-Ergazan, *O men*
Abl.	Azzeks, aggargaz, *from the man*	As yergazan, *by the men**.

IV. Examples of the Numbers in Nouns.

Argaz, *a man*, pl. Ergazan
Thamattooth, *a woman*, pl. Khaleth
Aksheesh, *a boy*, pl. Eksheechan, Elouashul
Thaksheeth, *a girl*, pl. Thaksheesheen
Ammee, *a son*, pl. Arrou
Allee, *a daughter*, pl. Assee
Aghma, *brother*, pl. Aeethma
Aoulatsma, *sister*, pl. Yasthma
Amdakkal, *friend*, m. pl. Emdukkal
Thamdakkalts, *friend*, f. pl. Themdukkal
Eslee, *bridegroom*, pl. Eslan
Thesleeth, *bride*, pl. Theselatheen
Akarroee, *head*, pl. Ekaroeen
Oodham, *face*, pl. Oodhamouean
Theet, *eye*, pl. Allen
Thinserth, *nose*, pl. Anzeran
Elas, *tongue*, pl. Elsouwan
Akammoosh, *mouth*, Ekammooshan

at the end of the substantive. Thus, from *el-mukhal*, which is Arabic for a musket, the Berbers make *te mukhalt* or *te mukhalnit*, and from *magas*, scissors, *temagast* or *temagasnit*. P. S. D.

* M. Venture, p. 420, says that nouns in the Berber language are indeclinable, but their plural varies a great deal. The cases, he adds, are indicated by numerous prepositions, some of which he instances, which are *cn*, *n*, *cb*, *nou*, *eghy*, *ou*, *gh*, *b*. Whenever he attempted to make use of any of these, he was shown that he was in an error. He gives the dative singular of the word *man*, precisely as our author, with the only difference of the French spelling. On the whole he admits that he is not sufficiently familiar with the language to be able to give certain rules. It would appear that the signs of the cases vary, according to the kind of substantive to which they are applied, or perhaps to the idea meant to be conveyed. Thus: to the man *i ourerghez;* to Mekines, *ghi Meknes;* to the house, (or perhaps, *at* the house, *à la maison*) *s'akham*. Mr Hodgson will probably elucidate these points, in the grammar which he intends to write of this language.

There are languages, such as the Laplandic and Finnic, which are known to have a multitude of cases; and it is probably the same with the Berber. Whether these are expressed by prepositions or inflexions, makes little difference. It still adds to the precision of the language. P. S. D.

Oogel, *tooth*, pl. Oogelan
Thagannoos, *foretooth, incisor*, pl. Thagannooseen
Egheel, *arm*, pl. Eghallan
Afus, *hand*, pl. Efessan
Amassat, *leg*, pl. Emassatan
Atar, *foot*, pl. Etarran
Thifdents, *toe*, pl. Thifadhnan.

V. Inflections of an Adjective.

Argaz dhalâlee, *a good man*
Thamattooth dhalâlee, *a good woman*
Ergazan dhalâleen, *good men*
Elkhaleth dhalâleen, *good women*
Dhefoohan, m. sing. *bad*
Tsefoohants, f. sing. *bad*
Dhefoohanan, m. pl. *bad*
Tsefoohaneen, f. pl. *bad*
Amghar, m. sing. *old**
Thamgharth, f. sing. *old*
Emgharan, m. pl. *old*
Themghareen, f. pl. *old*.

VI. Comparison of an Adjective.

Argaz agasenen, *a good man*
Argaz agasenen fellas, *a man better than he*
Argaz agasenen nezza, *a very good man, or the best man*
Fellas, (*means*) *above him*
Nezza, (*means*) *very*.

VII. Numerals.

Ewan, m. Eweth, f. *one.*
Seen, m. Seenth, f. *two.*

The remaining numerals are Arabic and suffer no change†.

VIII. Pronouns.

1. *Personal.*

Nekkee, m. Nekkönee, f. *I*
Khetchee, m. Khemmee, f. *thou*
Netsa, *he;* Netseth, *she;* Ikra, *it*
Nekenee, m. Enkentsee, f. *we*
Khoonwee, m. Khoonemtsee, f. *you*
Nuthnee, m. Nuthentsee, f. *they*.

* What is the word for *old* in Abyssinian? Might not the name of the *Amharic* language be derived from it? P. S. D.

† M. Venture gives the numerals in the Berber language, from one to one hundred millions. The word *miyet*, one hundred, Mr Langlès, in a note, observes to be Arabic, and *ifid*, one thousand, he says, is a corruption of the Arabic *elf*. On the remainder he makes no observation, which would seem to prove that the Arabic numerals are not every where used by the Berbers, though they may be in the neighbourhood of Algiers. P. S. D.

2. *Possessive.*

Eoo, m. and f. *my*
Eek, m. eem, f. *thy*
Ees, m. and f. *his* or *her*
Annagh, m. tsagh, f. *our*
Anwan, m. koonts, f. *your*
'Nsan, m. 'nsants, f. *their.*

3. *Independent or Possessive.*

Enoo, m. and f. *mine*
Nek, m. nem, f. *thine*
Nes, m. and f. *his or her*
Nannagh, m. 'ntsagh, f. *ours*
Nanwan, m. *yours*
Koonts, f. *yours*
'Nsan, m. 'nsants, f. *theirs.*

4. *Demonstrative.*

Wayee, m. thayee, f. *this*
Ouweed, n. ouwetseed, f. *that*
Weyee, m. theyee, f. *those*
Ouwethend, m. ouwethenseed, f. *those.*

5. *Relative.*

Winna, m. sing. *who*
Thinna, f. sing. *who*
Enna, m. pl. *who*
Jeena, f. pl. *who.*

6. *Interrogative.*

Enwawa, m. entsa, f. *who?*
Ashou, n. *what?*
Enwee, m. entsa, f. enwee, n. *which?*

For pronouns combined with the verb, see below.

IX. Of the Verb.

In this language the imperative mood is the radical from which the other moods and tenses are derived.

In the conjugation of verbs there is a masculine and a feminine gender.

The following paradigms are not complete, and are only given by way of specimens of the manner in which verbs are conjugated in the Berber language.

The Substantive Verb TO BE.

IMPERATIVE MOOD.

Sing. Elee, m. and f. *be thou*
Plur. Eleeth, m. eleemths, f. *be ye.*

Participle.

Sing. Illa, m. thilla, f. *being*
Pl. Illan, m. illants, f. *being.*

INDICATIVE MOOD.

Present Tense.*

Singular.	*Plural.*
m. Nekkee adheleegh, *I am*	m. Nekenee annelee, *we are*
f. Nekkinee adheleegh, *I am*	f. Enkentsee annelee, *we are*
m. Khetchee atseleed, *thou art*	m. Khoonewee atseleem, *you are*
f. Khemmee atseleed, *thou art*	f. Khoonemtsee atseleem, *you are*
m. Nitsa adhelee, *he is*	m. Nutheree adheleen, *they are*
f. Netseth atselee, *she is*	f. Nuthentsee adheleents, *they are.*

Preterite.

Singular.	*Plural.*
m. Nekkee allegh, *I was*	m. Nekenee nella, *we were*
f. Nekkinee allegh, *I was*	f. Enkentsee nella, *we were*
m. Khetchee thaleed, *thou wast*	m. Khoonwee thellam, *you were*
f. Khemmee thaleed, *thou wast*	f. Khoonemtsee thellamts, *you were*
m. Netsa ella, *he was*	m. Nuthnee ellan, *they were*
f. Netseth thella, *she was*	f. Nuthentsee ellants, *they were.*

Neuter Verb TO SPEAK.

IMPERATIVE MOOD.

Sing. Sewal, m. and f. *speak thou*
Pl. Sewalts, m. sewalemts, f. *speak ye.*

INDICATIVE MOOD.

Present Tense.

Singular.	*Plural.*
m. Nekkee adhseulagh, *I speak*	m. Nekenee anseual, *we speak*
f. Nekkinee adhseulagh, *I speak*	f. Enkentsee anseual, *we speak*
m. Ketchee atsseulad, *thou speakest*	m. Khoonwee atsseulem, *ye speak*
f. Khemmee atsseulad, *thou speakest*	f. Khoonemtsee atsseulemts, *ye speak*
m. Netsa adhseual, *he speaks*	m. Nuthnee adhseulan, *they speak*
f. Netseth adhseual, *she speaks*	f. Nuthentsee adhseulants, *they speak.*

* M. Venture says that in the Berber verbs the present tense is wanting, and is expressed by the preterite, as in the Arabic and Hebrew languages. P. S. D.

Preterite.

Singular.	*Plural.*
m. Nekkee aseulagh, *I spoke*	m. Nekkenee neseual, *we spoke*
f. Nekkinee aseulagh, *I spoke*	f Enkentsee neseual, *we spoke*
m. Khetchee tseulat, *thou spokest*	m. Khoonwee tseulem, *ye spoke*
f. Khemmee tseulat, *thou spokest*	f. Khoonemtsee tseulemts, *ye spoke*
m. Netsa eseual, *he spoke*	m. Nuthnee aseulan, *they spoke*
f. Netseth tseual, *she spoke*	f. Nuthentsee aseulants, *they spoke.*

Active Verb TO STRIKE.

INDICATIVE MOOD.

Present Tense.

Singular.	*Plural.*
m. Nekkee oothigh, *I strike*	m. Nekenee annooth, *we strike*
f. Nekkinee oothigh, *I strike*	f. Enkentsee annooth, *we strike*
m. Khetchee thoothid, *thou strikest*	m. Khoonwee atsoothem, *ye strike*
f. Khemmee thoothid, *thou strikest*	f. Khoonemtsee atsoothemts, *ye strike*
m. Netsa yootha, *he strikes*	m. Nuthnee adhoothen, *they strike*
f. Netseth thootha, *she strikes*	f. Nuthentsee adhoothents, *they strike.*

Preterite.

s. m. Nekkee oothighth, *I have struck*
p. m. Nekenee nootheth, *we have struck*
p. m. Nuthnee oothent, *they have struck.*

Future Tense.

s. m. Nekkee athoothagh, *I shall or will strike*
p. m. Nekenee athnoothagh, *we shall or will strike.*

Passive Verb TO BE STRUCK.

INDICATIVE MOOD.

Present Tense.

Singular.	*Plural.*
m. Nekkee atsoothagh, *I am struck*	m. Nekenee netsooth, *we are struck*
f. Nekkinee atsoothagh, *I am struck*	f. Enkentsee netsooth, *we are struck*
m. Khetchee thetsoothad, *thou art struck*	m. Khoonwee thetsoothem, *you are struck*
f. Khemmee thetsoothad, *thou art struck*	f. Khoonemtsee thetsoothem, *you are struck*
m. Netsa yatsooth, *he is struck*	m. Nuthnee athsoothem, *they are struck*
f. Netsath thatsooth, *she is struck*	f. Nuthentsee atsoothents, *they are struck.*

Negative form of the Verb TO STRIKE.

s. m. Nekkee oorakkathgara, *I do not strike*
s. f. Nekkenee oorakkathgara, *I do not strike.*

The same with Transitions.

s. m. Nekkee oorthakkathgara, *I do not strike him*
s. m. Nekkee oorathnekkathgara, *I do not strike them.*

Further Examples of Transitions.

Efk, *give*
Efkas, *give him*
Efkee wayee, *give me that*
Efkagh, *give us*
Efkasth, *give it to him*
Oorasthatsakkara, *do not give it to him*
Oorasnathtsakghara, *I will not give it to them.*

NOTE. *Efk*, the imperative form, is the radical syllable, from which the pronouns can be readily separated; *s* represents the accusative or dative *him* or *to him;* and *th*, the neuter pronoun *it* or *to it*. *Oor* and *ra* are the initial and final negatives. This greatly resembles the American Indian formations.

Another Example.

m. & f. Netsa yabgha-ee, *he loves me*
m. Abgegh-k, *I love thee*
f. Abgegh-kem, *I love thee*
m. Abgegh-th, *I love him*
f. Abgegh-ths, *I love her*
m. & f. Abgay-agh, *he loves us*
m. Abghegh-koom, *I love you* (plural)
f. Abghegh-koonts, *I love you* (plural)
m. Abghegh-then, *I love them*
f. Abghegh-thents, *I love them.*

BERBER POETRY.

Of the various specimens of Berber poetry in my possession, the following is not the fairest example of its versification. In this, however, rhythm is always observed, and metre generally. The second and third stanzas are of trochaic measure. The Berber poetry has various metres, and among others, the Greek ἐπίτριτος. It seems to be subjected to fixed laws of pronunciation and orthometry.

The following song is sung by the Kabyle women, at the departure of the *errafka*, a company of men who set out from their villages, under the safe conduct of a leader called the *bofessa*, to go to Algiers. The object of this journey is thus explained: "under the treaties of peace with the regency, great numbers of all these (Kabyle) tribes seek employment in Algiers and its neighbourhood, as shepherds and field labourers, and with foreigners, as house-servants." Shaler's Sketches of Algiers, p. 94. With their wages of two dollars and a half per month, these Kabyles are allowed three small loaves of black bread and some oil. Their lodgings is the stable, and their covering the clothes which they wear in the day.

Berber Song.

1. Awidden dhedhesents adhich aminsee
2. Egan gara sanoee.
3. Ahath 'k-Idjennan, agkhadem latseman
4. Aghrom dhemasas, ishthok eghaman
5. Athemelewin, hoozzimts thefrewin
6. Abreed elhamma, limbeth ghoorewin
7. Shiagh adhleel arnegh oola adhlaoonais
8. Aghra lezair anidha ekhadem elkais
9. Ai, Sidi Yahaya! abab netsa booth
10. Afooyagh adhnoob, argaz thamattooth.

Translation.

1. I wish to go with them to partake of the Aminsee*,
2. To enjoy with him the pleasures of love.
3. He is working in the garden, earning the tseman†,
4. Eating saltless bread, and longing for his home.
5. Dove! Speed thy wings in flight,
6. Speed to El-hamma‡, there pass the night:
7. Bear my ear-ring, and even my necklace
8. To Algiers, where the good man is working.
9. Oh, Sidi Yahaya§! thou blessed father,
10. Pardon the sins of the man and his wife.

* *Aminsee*, the evening repast of the Kabyles.
† *Tseman*, a small coin.
‡ *El-hamma*, a place so called near Algiers.
§ *Sidi Yahaya*, a distinguished Maràbbut.

Imitation.

Th' errafka 's gone—O great bofessa, take
Me to the good man, nor me thus forsake;
Take me to where I shall behold his face,
Taste his aminsee and his sweet embrace.
Joyless he works, in gardens or in fields,
His daily labour one poor tseman yields:
His bread is saltless, and with that alone
He longs and wishes for his chearful home.
O! gentle Dove, quick spread your wings in flight,
Speed to El-hamma and there pass the night:
Bear him these tokens, my necklace, my ring,
My bracelets, my pendents, my ev'ry thing.
Oh, Sidi Yahaya! grant us blessings and life,
And pardon the sins of the man and his wife.

A BERBER TALE.

WITH AN INTERLINEAL TRANSLATION.

Eweth	el marra	bekri,	ennan,	irouh	ewan	itheddou
One	time	long ago,	they say,	went	one	traveller
adh-ouabzeed	alemmi	adh-ewan	ad-el-hal	oumâda	itswals	addakhan.
in the road	till	one	place	solitary	he saw	a smoke.
Ikabbel	ghar-dhinna	alemmi	iwouad;	gaf	adh-ewan	awergez
He approached	towards there	till	he arrived;	he found	one	of man
ala	metsa;	ouahedas	dha-oudeou,	adh-seen	el-bizan,	etletsa
except	him;	alone he	with a horse,	with two	falcons,	three
ibrahash;	adhiker	esbaeh,	adhirkeb	aoudeou,	yawee	ibrahash,
pointer dogs;	he rises	in the morning,	mounts	horse,	takes	pointers,
irouh,	enagh	ella-asha	'l mehella,	ouahedas	ekled;	eyan weed
went,	fights	till evening	with troops,	alone he	he returns;	those with
itsnagh	esmouansen	Ifragatin;	alemmi	adh-ewan	aouess	
he fought	their name	Ifragatin;	till	one	day	
ennanassen,	amek	aranahadem?	efan	ewan	aouamghar	
they said themselves,	how	shall we do?	they find	one	of old man	

isseulasen, ennanas, amek? enniassen, ashou erkeb?
he spoke to them, they say to him, how? he says to them, what rides?

ennanas, dha-oudeou, inannou seen ibrahash adh-seen el-bizan.
they say to him, a horse, besides two pointers and two falcons.

Enniassen: awethes setsa el-khaleth adh-seen thibrahash
He says to them: take to him six women and two pointer bitches

adh-seen el-bizan dha seeneth thagmareen. Azek annetan
and two falcons (female) and two mares. The morrow the other

khademan akenni; mioutan, netsa iwouad, azwouran. El-khaleth
they do so; they arrive, he arrives, go before. The women

akenni edtizra erra adahnis ghoor-sent; ibrahash oozlan
when he saw them moved heart his towards them; pointers run

ghoor-thibrahash, el bizan akenni, asadeou dra-genta; akenni izra
to the bitches, the falcons so, horse he also; when he saw

yarrash ghaf-thegamareth; azzinas, atfant, awouint.
jumped upon the mare; they surround him, take him, carry him off.

Ikka setsa ayam; had ennias, athnenogh; had ennias, asel;
He remained six days; one said, I will kill him; one said, not so;

ikrad ewan enniasan, ghot: adjmanas esgaran: essarghant.
rose one said, I will kill him: they collected him wood: they burn him.

Athfook.
Ended.

Free Translation.

Once upon a time, they say, there was a man travelling on a journey, when he came to a solitary place, where he saw smoke. He approached it, and found one man, accompanied by his horse, two falcons and three pointer dogs. This man rose in the morning, mounted his horse, took his pointers with him, and went to fight with the troops of a certain tribe. He alone contended with them till the evening, and then returned. The name of the tribe with which he fought, was Ifragatin. This he continued to do for some time; when at last the people of the tribe said, What shall we do? They resort to an old man, to ask his counsel. He asked them, How is the man mounted? They replied, Besides his horse, he has two falcons and three pointers. The old

man then said, Take with you to the battle six women, two pointer bitches, two female falcons, and two mares. On the morrow they followed the advice of the old man. When they arrived on the field of battle, they sent the six women in advance. When they were perceived by the enemy, the passion of love inflamed his heart, the pointers ran off after the bitches, the falcons flew to their females, and the horse rushed to a mare. The men of the tribe at this moment came up, surrounded and seized them. The solitary enemy remained a prisoner for six days, when some of the tribe advised his death, but others opposed it. At last one man rose up, and said, He shall be killed. Faggots were then piled around him, which they lighted, and burned him to death.

NO. II.

Description of a new species of Sarracenia. By Thomas Nuttall. Read May 7th, 1830.

AMONG the more curious new species of plants which I have lately detected, in a pedestrian tour of twelve hundred miles through the states of South Carolina, Georgia, Alabama and Florida, is the following:

Sarracenia *Calceolata.

Pumila; ascidiis reclinatis, tubo ventricoso, operculo subgloboso-inflato carinato, gine intruso-inflexo, ore subrotundo parvo.

Description. A very distinct and dwarf species, about the relative size of *S. adunca*, but lower. The autumnal ascidia are furnished with broad leafy ridges running along the upper edge of the tube; these appendages become much narrower in the vernal ones, but their very similar character throughout each section of the genus renders their specific employ wholly useless: the ordinary ascidia are short and reclinate, with a ventricose tube scarcely ever exceeding three or four inches in length. The operculum (unlike all the other species) is confluent with the tube and of a singular, inflated, globular form, *carinate* above, bluntly pointed and uncinately curved, with the edges broadly inflected, so as to leave only a circular opening, as in the lip of the *Cypripedium*, which this appendage indeed wholly resembles; its colour is usually a fine purple-red, varied and reticulated with varioloid diaphanous whitish meshes somewhat similar to those of the operculum

of *S. variolaris;* the inner side of the tube is almost throughout lined with long coarse reflected hairs, which must thus render it a formidable trap to all winged insects. Interfoliar stipules small and ovate. Scape a little longer than the ascidium. Flowers nearly the size of those of *S. purpurea.* the petals lingulate-oblong, dark blood-red; twice the length of the calyx; the angles of the peltate stigma deeply emarginate.

Habitat. West Florida, near Tallahassee (ten miles west, rare). Very abundant in Tatnal county, Georgia, particularly within a few miles of the new court-house; growing with *S. variolaris* and *S. flava,* in the drier sphagnous marshes, by the margins of the "Bay-galls" or ponds, in the usual sandy pine-forests. Flowering time, March to April:—confined to about the latitude of thirty to thirty-two degrees.

Observation 1*st.* The natural affinity of this very singular North American genus continues to demand investigation. After many fruitless attempts on my own part, I have at length had the satisfaction of observing the germination of *S. purpurea* in the collection of Mr Hibbert of Philadelphia, who very opportunely called my attention to the subject; this species, then, has perfectly distinct, long, *linear cotyledons;* probably, from their appearance, folded and involute within the seed. At present, we cannot but consider the *Sarracenia* as the type of a distinct order *Sarraceniaceæ,* bearing some remote affinity perhaps with the *Nymphæaceæ.* Most of the species are confined to the more temperate regions south of Virginia.

Observation 2*d.* The genus now presents *three* sections in the form of the ascidia.

In the first, the ascidia are erect and tubular, in the form of trumpets, with the operculum *free* and reflected. In this are included *S. flava* and *S. Catesbyana,* lately restored by Mr Elliott. In these the flowers are yellow*.

* To the first section (with *S. flava* and *S. Catesbyana*) may also be added, to me an obscure species, *S. rubra* of Walter, "foliis erectis tubulatis, *valva plana* erecta," which, as Mr Hooker remarks in his Exotic Flora, Vol. I. p. 14, cannot certainly be the *S. psittacina* of Michaux, (a species with which I am familiar from the very places quoted by the discoverer), in which the operculum is *always* strongly recurved as well as arched. The figure given by Mr Hooker, t. 13, also perfectly accords with Walter's character; the ascidium in fact being erect, and very similar to that of *S. flava,* except in the greater dilatation of the summit of the tube. In this species the flower is a deep red.

In the second section, the ascidia are ventricose and reclinate, with the operculum *free* and arched over the aperture of the tube. The relative order of this section to the preceding will be *S. aduncа*, somewhat allied to the preceding in the almost erect tube;—then *S. purpurea*, of which, near Northampton, Massachusetts, there exists a yellow-flowered variety;—*S. variolaris*, with the operculum also strongly arched, and marked with diaphanous reticular meshes, the flowers yellow; in the two other species they are a dark brownish red.

Our present new species, *S. calceolata*, will form a third section, characterized by producing reclinate ventricose ascidia, having the operculum *confluent* with the tube, and with the margin reflected inwards, so as to leave only a circular foramen passing into the tube; it is also like *S. variolaris*, marked with diaphanous discoloured meshes. The flower is deep red. This is the most southern species yet discovered, and confined apparently to about the parallel of the thirtieth degree.

NO. III.

Description of a Species of Orang, from the north-eastern province of British East India, lately the kingdom of Assam. By Richard Harlan, M.D., &c. Read November 19th, 1830.

SIMIA, Linn.—HILOBATES, Illig.

S. Hoolock. Colour of the skin and hair, deep black; canine teeth very long; a band of whitish grey hairs over each eye.

Dimensions. Total length, about two feet six inches. Humerus eight inches nine-tenths; radius nine inches; hand, from the beginning of the wrist to the end of the fingers, six inches; inferior extremities about thirteen inches; the foot six inches.

Habitat. Garrow-Hills, Assam, and probably extending into China between latitudes twenty-five and twenty-seven degrees north. *Cab. of A. N. S. Philadelphia.*

The present specimen is an adult male; and forms one of three individuals which lived some time in possession of Dr M. Burrough, who has lately returned from India, with a magnificent collection of rare and valuable skins of birds and quadrupeds, selected principally from the plains of the Burrampooter river. Dr Burrough informs me, that there is not much exterior difference between the adult male and female. The young, we shall have occasion to notice, possesses several characteristic marks. They were all taken on the Garrow-Hills, in the vicinity of Goalpara, in the latitude of twenty-six degrees north; they very soon became tamed, especially the young one: they were docile, affectionate, and rather inclined to melancholy.

According to the accounts of the natives, these animals are not found south of the regions specified. There can not be the least

J. M. Bird Del

F. Watts Sc.

One Fifth size of Nature.

One Half size of Nature

A. B. Enastrom Del

One Fourth size of Nature.

SIMIA HOOLOCK.

doubt but that this species is the same mentioned cursorily in Latreille's Buffon Vol. XXXV. p. 140. The observations relative to the habits of this species contained in this account, corresponding in so many respects with the specimens introduced by Dr Burrough, induces us to make the following translation. "Mr Gordon has sent me the drawing of an Orang, which the King of Assam had made a present to Mr Harwood, president of the provincial council of Dinagipal. The brother of Mr Harwood brought it to the Cape of Good Hope and presented it to Mr Gordon, with whom it unfortunately lived only one day. It had been attacked with scurvy on ship-board, and on arriving at the Cape was so feeble as to die at the end of twenty-four hours; thus Mr Gordon had only time to make a drawing of it; and not being able to make any observations on its habits, has communicated the information he obtained from Mr Harwood, as follows. This Orang-outang, named Voulock [Hoolock] in its native country, was a female, and regularly menstruated, but the discharge was interrupted after the attack of scurvy. She was of a very gentle disposition, only monkeys displeased her, whose presence she could not endure. She always walked in the upright attitude, and could even run very fast: when walking on a table, or among china-ware, she was very careful not to break any thing: when climbing she used only her hands; her knees resembled those of man. Her cry was sharp and deafening, pronouncing often and frequently repeating the syllables yaa-hoo! yaa-hoo! yaa-hoo!—with the emphasis on the last syllable, particularly on the terminal sound: when she heard any noise resembling this, she commenced crying also. When contented, she emitted a low guttural sound. When sick she whined like a child, and was fond of being nursed. Her food consisted principally of vegetables and milk; she would never touch a dead animal, or eat meat, and refused even to eat from a plate which had contained meat" [in this respect she differed from those individuals in the possession of Dr Burrough, these latter would eat meat occasionally]. "When thirsty, she plunged her fingers into the water and licked them: she voluntarily covered herself with pieces of sail-cloth, but would not endure clothes. She would come when called by name. She was commonly melancholy and pensive. When answering to the

calls of nature on board of ship, she would hold on to a rope and evacuate into the sea.

The length of her body was two feet five inches and a half—the circumference of the chest was one foot two inches—that of the thinnest part of the body was ten inches and a half: when in health she was fatter, and had calves to the legs.

The drawing had been taken during illness, or after death, when the subject was greatly emaciated: there were nails on all the fingers."

Notwithstanding the high northern latitude of the country in which this species is native, it would appear that they are less able than even other *Gibbons* to endure the hardships of captivity and change of climate. All those belonging to Dr B. died, either on their passage down the river from Goalpara, or on board vessel before they arrived at the Cape of Good Hope.

The Gibbons, or long armed apes, in many particulars, all bear a very close resemblance to each other. Thus the *S. lar.*, *leucisca*, *agilis*, *syndactylus*, and *concolor*, which includes all the species hitherto described, differ from each other only in some particulars of size, colour, proportions and markings. The present specimen is as strongly characterized, as distinct, as any of the others. In some of its habits, particularly in its mode of drinking, it resembles the Siamang of Sir Stamford Raffles, or S. syndactylus; but differs widely in other respects. In form. size, and proportion, it is most closely allied to the females of the S. agilis of F. Cuv., but is very different in colours and markings, especially the young individuals of the two species, which differ totally in these respects: the male and female resemble each other in the present species, but the sexes are different in size and colour in the S. agilis; the two species differ also in their habits; both differ also from the S. lar., Linn.

The skin of the present species is of a deep black colour, which, on the hands at least, is not confined to the rete mucosum, as the *cutis vera* of the palms remains black after maceration, so as to destroy the epidermis.

The hair, which is *universally* black, with the exception of the grey band across the forehead of the adult, covers the back of the hand to the ends of the fingers, and on the palm descends as low as half the

length of the metacarpal bones. In both old and young the hair on the fore-arm is reversed.

In the young individual, which is about half the size of the adult, besides the difference of colour, a remarkable peculiarity was noticed in the relative proportions of the arm and fore-arm, as will be observed in the following measurements. Total length, two feet six or eight inches; humerus, eight inches nine-tenths; ulna, ten inches three-tenths; femur, eight inches: tibia seven inches; length of the head from the vertex to the chin, four inches five-tenths—breadth, two inches five-tenths.

In the young animal the fore-arm is *shorter* than the arm, a fact at variance with the proportions of those parts, not only in the Orangs, but in all the race of adult Simiæ. In the adult of this species the arm and fore-arm are within one inch two-tenths of being equal in length.

In the *S. concolor*, (Harl. Journ. A. N. S. Vol. V. p. 229, pl. ix.) the fore-arm is two inches and a half longer than the arm*. If M. F. Cuvier's account of the dimensions of the *S. agilis* be correct, there is six inches difference between the length of the arm and fore-arm; but if the author has improperly included the hand and fingers in the term "fore-arm," the proportions of these parts are nearly similar in the S. agilis, and S. Hoolock.

The colour of the young of the present species is blackish-brown—back of the hands and feet sprinkled with grey—buttocks greyish: a tuft of greyish hairs grows from the point of the chin, and a line of the same colour extends along the middle of the front of the body: the band of grey over the eyes of the adult is generally interrupted in the middle of the forehead by a line of black hairs—which is absent in the young one; the band is broader in the latter, in the proportion of seven-tenths to four-tenths.

Buffon, speaking of the habitat of the Gibbons (Vol. XXXV. p. 200), remarks, "it appears to inhabit the more northern countries, and that the ape of the province of Gannaure, on the frontiers of China,

* In the Bull. des. Sc. Univers. 1830, M. Lesson remarks that the S. concolor is probably a variety of the *S. lar.*, notwithstanding the former animal has *two dorsal vertebræ*, and *two ribs* more than the former, not to mention other distinctive characters.

ought to be referred to the Gibbon; which some travellers have indicated under the name of Féfé."

The following extract is quoted by Buffon; "in the kingdom of Gannaure, frontier of China, there exists an animal very rare, which they call *Fefe;* it has almost the human form; the arms very long; the body black and hairy; walks lightly and very fast." (Recueil des Voyages. &c. Rouen, 1716, Tome III. p. 168.)

It is this Féfé, which the traveller Nieuhoff describes as carnivorous and anthropophagous; a character attributable to the extreme length of the canine teeth. It is highly probable that Féfé is the Chinese name for the Assamese "Hoolock." The dentition of this species bears close analogy to that of the S. agilis or Wou-wou, so accurately detailed by F. Cuv. (Dent des Mammiferes. &c.): the only difference is the greater length of the canines of the *Hoolock.* and the obsolete appearance of the longitudinal grooves, especially that on the posterior face of this tooth.

In all particulars not mentioned this species resembles the other Gibbons. A drawing of the adult male and young female, also the cranium of the adult male, accompanies the description.

For the details concerning the habits of the specimens which form the subjects of the present description, we refer to the observations contained in the annexed letter from Dr Burrough.

"*To Richard Harlan, M.D.*

"The specimens of Ourang Outang, or Gibbons, furnished you, were obtained by me during my late excursion into the interior of Bengal. They were presented to me by Captain Alexander Davidson of the honourable East India Company, stationed at Goalpara, situate on the Burrampooter river in *Assam.* This district of country was formerly attached to the Burmese empire: but at present is in possession of the East India Company, and constitutes the north eastern limits of their territory in this quarter.

"The Ourang, of which I am now to speak, called by the Assamese '*Hoolock*,' is to be met with on the Garrow-Hills in the vicinity of

Goalpara, between latitudes twenty-five and twenty-eight degrees north, and the specimens brought to this country by me were taken within a few miles of the town of Goalpara. The full-grown one, which at this time you have prepared, was in my possession, alive, from the month of January to May, when it died from a blow it received across the lumbar region, inadvertently inflicted with a small stick by one of my servants at Calcutta. They inhabit more particularly the *lower* hills, not being able to endure the cold of those ranges of the Garrows of more than four or five hundred feet elevation. Their food in the wild state consists, for the most part, of fruits common only to the jungle in this district of country, and they are particularly fond of the seeds and fruits of that sacred tree of India, called the Peepul-tree, and which on the Garrow-Hills attains a very large size. They likewise take of some species of grass, and also the tender twigs and leaves of the Peepul and other trees, which they chew, swallow the juice thereof, and reject the indigestible part. They are easily tamed, and when first taken show no disposition to bite unless provoked to anger, and even then manifest a reluctance to defend themselves, preferring to retreat into some corner rather than to attack their enemy; they walk erect, and, when placed upon a floor or in an open field, balance themselves very prettily, by raising their hands over their head and slightly bending the arm at the wrist and elbow, and then run tolerably fast, rocking from side to side; and if urged to greater speed, they let fall their hands to the ground, and assist themselves forward, rather jumping than running; still keeping the body however nearly erect—if they succeed in making their way to a grove of trees, they then swing with such astonishing rapidity from branch to branch, and from tree to tree, that they are soon lost in the jungle or forest.

"The individual in question became so tame and manageable in less than a month, that he would take hold of my hand and walk with me, helping himself along at the same time with the other hand applied to the ground as described above. He would come at my call and seat himself in a chair by my side at the breakfast table, and help himself to an egg, or the wing of a chicken from my plate, without endangering any of my table furniture—he would partake of coffee, chocolate, milk,

tea, &c., and although his usual mode of taking liquids was by dipping his knuckles into the cup and licking his fingers, still, when apparently more thirsty, he would take up the vessel from which I fed him with both hands, and drink like a man from a spring; his principal food consisted of boiled rice, boiled bread and milk with sugar, plantains, bananas, oranges, &c., all of which he ate, but seemed best pleased with bananas; he was fond of insects, would search in the crevices of my house for spiders, and if a fly chanced to come in his reach he would dexterously catch him in one hand, generally using his right hand. Like many of the different religious castes of this country, he seemed to entertain an antipathy to an indiscriminate use of animal food and would not eat of either the flesh of the cow or hog, would sometimes taste a little piece of beef, but never eat of it; I have seen him take fried fish, which he seemed to relish better than almost any other description of animal food with the exception of chicken, and even this he would eat but very sparingly of, preferring his common diet, bread and milk, and milk with sugar, fruit, &c. In temper he was remarkably pacific, and seemed, as I thought, often glad to have an opportunity of testifying his affection and attachment for me. When I visited him in the morning, he would commence a loud and shrill Whoo-whoo-whoo-whoo, which he would keep up often from five to ten minutes, with an occasional intermission for the purpose of taking a full respiration; until finally, apparently quite exhausted, he would lie down and allow me to comb his head, and brush the long hair on his arms, and seemed delighted with the tickling sensation produced by the brush on his belly and legs; he would turn from side to side, first hold out one arm and then the other, and when I attempted to go away he would catch hold of my arm or coat tail, and pull me back again to renew my little attentions to him, daily bestowed; if I called to him from a distance and he could recognize my voice, he would at once set up his usual cry, which he sometimes gradually brought down to a kind of moan, but generally resumed his louder tone when I approached him. This animal was a male, but showed no particular marks of the sex, and by a casual glance might readily, if not examined more closely, have passed for a female. I have no idea of his age, but judging from the size and length of his canine teeth, suppose him to have been advanced in life.

"The other large '*Hoolock*,' of which you have the cranium, was also a male and full grown; he was likewise obtained from the Garrow-Hills in Assam, presented to me by my friend Captain A. Davidson of Goalpara. He came into my possession in the month of April, and died at sea in July, just before getting up with the Cape of Good Hope, of a catarrhal affection: his death probably might have been hastened from the want of proper food, such as is not procurable on long voyages. This animal was similar in habit and general characters to the one already described, and may have been eight or ten years of age or perhaps older, as I am informed by the natives of Assam they live to the age of twenty-five or thirty years.

"The young specimen was also alive in my possession—this is a female, and was brought to me by a Garrow Indian at the same time the first was received, but died on the way from Goalpara to Calcutta of a pulmonary disease following catarrh. This poor little creature when first taken sick suffered great pain and oppression at the chest, for which I prescribed a cathartic of castor oil and calomel, and a warm bath, which seemed to afford it some temporary relief, but she died after ten days illness. The animal appeared delighted with the bath, and when I removed her from the vessel she would run back again to the water, and lie down again until again removed; she was, like the others I had in my possession, gentle and pacific in disposition, very timid and shy of strangers, but in less than a week from the time she was taken, would, if put down in an open place, quickly run to me, jump in my arms and hug me round the neck. I supposed her to have been from nine months to a year old. I fed her on boiled milk, goat's milk diluted with water and sweetened with sugar candy; she also would sometimes partake of a little bread and milk with the older one; she soon learned to suck the milk from a small bottle, through a quill covered with a piece of rag.

"M. BURROUGH."

"*Nov.* 19*th*, 1830."

ARTICLE IV.

Silver Ores reduced by the Method of Becquerel. By Andres del Rio. Read November 5, 1830.

I HAVE the honour to present to the American Philosophical Society, the result of some curious researches, which in more dexterous hands may become interesting. They were suggested to me by the beautiful experiment of M. Becquerel, inserted in the Annales de Chimie et de Physique, for September 1829. He introduced, into a glass tube, some carburet of sulphur, with a solution of nitrate of copper, which, being of less specific gravity, floated upon its surface; and by means of a copper wire he established a communication between the two liquids. He observed that the surface of the wire became coated with protoxide of copper, while small tables, assuming a metallic and glistening appearance, were deposited on the sides of the glass tube. These M. Wohler has since shown to be formed of sulphuret of copper; whence he considers the method of Becquerel as being merely "a new mode of forming sulphurets," to which, I think, he should have added, "by the decomposition of other sulphurets." Indeed, I introduced severally into three small glass tubes, some small lamellæ of ductile and some fragments of brittle silver glance and red silver ore. These, being exposed to the action of nitrate of copper and a copper wire, were reduced in eight days to the state of metallic silver. I repeated the experiment on the ores in small fragments, which became coated with silver in five days. The formation of silver was even apparent on the second day at the points in which the ore came in contact

with the glass. By what process nature invests silver glance and red silver ores with native silver in the mines, is a question which I do not pretend to solve.

In operating upon the fragments of silver glance, which were coated in the preceding experiments with metallic silver, I added a little quicksilver. In fifteen days the ore was transformed into an amalgam of silver. The brittle sulphuret and the red silver ore required nearly three weeks for their complete amalgamation. According to M. Wohler the carburet of sulphur is decomposable in the same way by diluted nitric acid. I did not succeed in decomposing the dark red silver ore by nitric acid, until after a subsequent saturation of the acid with copper.

These experiments afford us instances of the reduction of silver ores without common salt, and sulphuret of iron and copper (the *magistral* of the Mexicans). I always suspected that the latter substance was very mischievous in the process of amalgamation, occasioning the great loss of silver and mercury which are daily experienced. The silver, being oxidized at the expense of the sulphuric acid, retains its oxygen with more tenacity, as has been shown by M. Berthier, than had been previously admitted; and especially when in contact with the oxide of copper, which possesses this property to a high degree. The same probably happens with the mercury; and the sulphates, bisulphates, and subsulphates which are thus formed are lost for ever in the process of washing. Hence, I think, they roast their silver ores in Saxony with common salt alone; and they treat the chloride of silver by mercury. By this means the loss of mercury amounts only to four ounces per five marcs of silver obtained in the working of ores that contain two ounces per quintal*. How satisfied would we be in Mexico if our loss were no greater.

I trust that the pupils of the college of mines of Mexico may derive some advantage from these small experiments of mine. Perhaps I have thus approximated to the discovery made by my lamented pupil *Valencia*, and which he unfortunately carried with him to the grave.

* The Mexican amalgamator divides his loss of mercury into two parts; the first he terms *consumido*, which is always equal at least to the weight of silver obtained. The second, termed *perdida*, is the waste in washing, &c.

I can state as a fact, that by his genius he had discovered the means of avoiding the loss of mercury termed the *consumido*. Such are the fruits resulting from colleges of mines. In my last letter I suggested to him the use of the protomuriate of tin, not of the nitrate of copper; and in his reply he informed me that his method was so simple, that he feared the workmen would deprive him of the fruits of it. As the mail was closing, he postponed the communication to his next letter, which however he never had an opportunity of writing, having previously, as well as many others of my able pupils, fallen a victim in the war of independence.

Should the Philosophical Society continue their liberality to me, by supplying me with a fragment of the white silver glance (*weisgulden* of the Germans), I propose to extend my experiments to that ore.

ARTICLE V.

Observations on the Naïades, and Descriptions of New Species of that and other Families. By Isaac Lea. Read before the American Philosophical Society, May 7, 1830.

SINCE I presented my last paper on the Naiades, which was published in the third volume of the Society's Transactions, I have been fortunate in obtaining many species hitherto undescribed.

I have possessed for several years many individual specimens which I supposed to be new, but which I deferred describing until I should possess of each kind individuals of different ages. My late acquisitions have converted my suppositions into certainty; and I now offer the following descriptions with a view to their publication in the fourth volume of the Society's Transactions, to be accompanied by figures executed like those attached to my last memoir.

In that memoir I took occasion to make some remarks on the "elevations on the surface of the disks." I had not at that time satisfied myself entirely in regard to the manner in which these were accomplished by the animal. Some fine specimens of the *Unio cornutus*, in all the stages of growth, having since been procured, I have been able to trace these formations through every degree.

It will be observed on examination, that the horns alternate; that is, those on one valve are not placed opposite to those on the other; consequently one is made at a time. The animal deposits the secreted carbonate of lime on the outside of the edge of one valve, where the horn is to be formed, and on the inside of the edge of the other; the

consequence of which is, that when the horn is sufficiently elevated, the line of the opening at the base of the shell has diverged from the plane of the valves into an obtuse angle at this point. The deposit of the secretion is then reversed, and the line of the opening at the base is soon restored to the plane of the valves. If another horn is to be formed, this lateral increase of the edges is carried on until the same effect is produced on the other side of the shell. The natural consequence of this alternation is a depression on the outer side of one valve corresponding to the horn on the other, and thus we ever find it. In one of my specimens the turn is so short, after the formation of the last horn, that this side passes over the other and forms a plane one third of an inch, so that the specimen presents the curious phenomenon of a shell standing erect on its base, when placed on a smooth surface.

The plicæ or folds are formed on the same principle. In the basal and posterior margins of the plicated species we may see the line of opening undulated by every fold, and when the deviation from the plane takes place in one valve it is followed up always by the other. In the *Unio tuberculatus*, when tuberculated to the edge, these tubercles cause it to be crenate.

In the *Unio metanevra* we are presented with different elevations on the disks. This beautiful and interesting species is furnished with elevations, small at the beaks, and enlarging towards the base along the umbonial slope. These elevations are antagonist, and being formed at the same time, we consequently see, in a certain stage of growth, quite a knob at the angle of the basal margin. In the *Unio lacrymosus*, which is furnished with smaller elevations on the umbonial slope, we find them to alternate.

When making some observations on "colour" in my last memoir, I mentioned that "the green irregular spots and marks" on the interior of the valves were "accidental, perhaps the effect of disease." Subsequent observation led me into an examination of these marks, and the result is a perfect conviction of their being epidermal matter, evidently placed occasionally between successive layers of nacre, as it were in anticipation of a future erosion of the beaks. In a specimen of *Unio pustulosus* (herein described) in my cabinet, erosion has taken place

into the mass of its thick beaks to the distance of one third of an inch, where a *false beak* is exhibited covered with a thin layer of epidermal matter, and a fracture of this false beak displays another within, entirely covered with the same matter. In the same specimen, which is more eroded than any I have seen, a considerable portion of the cardinal tooth is visible from the exterior, and this portion is also covered with epidermal matter.

I will take the opportunity here to remark on the absolute necessity of studying the different ages of the species of this family, to enable us to decide upon new species. I have never been more thoroughly convinced of any thing than this. When I have been able to do so, I have always placed in my cabinet at least three or four specimens of different ages. Four years since, I obtained a large old specimen of the *Unio multiplicatus* (herein described), which I placed with my specimens of *Unio plicatus*. Two young specimens were received at the same time, and so totally different were they in appearance, that it did not occur to me there was any similarity between them and the old one. These were placed with the *Unio tuberculatus*, in the belief of their being a compressed variety of that species. A specimen subsequently received, which furnishes the engraving, proved at once their identity by displaying the numerous undulations in the region of the beaks.

I have continued to give my attention to the habits of the animals of this family, but I have in vain attempted to satisfy myself as to the nature of their food. Dissatisfied with the results of the observations mentioned in volume third, I procured, among other species, a fine *Unio cariosus*, the valves of which were much more gaping than usual. Selected specimens of various species were placed in a glass vase, in the bottom of which was placed clean white sand, so that their natural beds might be somewhat imitated. In this vessel they assumed their natural position by pushing the sand behind them with the protruded foot, thus forming a pit into which the base of the shell gradually fell, the ligament taking the most elevated situation. In this position they soon began to travel round the vessel, and this locomotion continued for some days, when it ceased entirely.

Their extreme timidity or apprehension on the approach of danger

was very evident. At first the slightest agitation or movement of the vessel caused them to close their valves instantly. Being almost daily disturbed, this alarm after a time ceased, particularly with my fine *cariosus*, which now suffered even the agitation of the water without closing the valves, stretching out its fine dark and beautiful tentacula from the borders of its mantle, and forming by the contact of its edges two openings one below the other.

From the superior of these openings the constant stream ejected could be plainly perceived for two inches elevating the water at its surface. Being very anxious to ascertain through what part the water necessary to supply this stream was carried into the shell, I discovered it, after many experiments, to pass in by the inferior opening; that it passed out by the superior one had always been evident. This operation was unremitted while the water was fresh; when left unchanged for some days this current invariably ceased. Doubting the correctness of my former idea, as to the probability of their feeding on animalcula, from the circumstance of finding the passage of the water to exist only while fresh, and never when animalcula were visible even with a microscope of great power, I instituted some experiments by passing pieces of bread, very small pieces of worms, &c. between the tentacula. Several of them would sometimes remain for some minutes within the mantle and so far within as to be invisible, but they were in every case in a very short time thrown out with a rapid and sudden jet of water to the opposite side of the vessel.

These experiments were frequently repeated during the course of a year upon the same specimen, and the result was uniformly the same. No food introduced into the shell could be ascertained to have remained; it may therefore be pretty safely concluded, that neither animalcula nor food in a more solid state are necessary to the nourishment of the *Naïades*. What then are we to conclude it to be? Would the decomposition of water serve the purpose of nourishment as well as breathing? Certain it is, that during the many years I have been in the habit of almost constantly having them alive for examination, dissection, &c. I have never in any instance given them food, unless it was conveyed invisibly to them in the pure water with which our city is supplied through our works from the river, and which was given them every few days.

When I established the genus *Symphynota**, I remarked on the difficulties attending the present generic divisions of the family *Naïades*. Since that period a closer attention to these divisions has convinced me of the entire impossibility of defining limits to them. The hinges in the species of the different genera glide or shade away so completely into each other, that I have no hesitation in saying it is entirely impossible for any naturalist to mark out a line of unvarying character to most of them. It must therefore be conceded that other characters are required for generic divisions.

If we examine the

Anodonta cygnea (Lam.), we find the margin under the beak and ligament to be an uninterrupted line. In the

Iridina nilotica (Sowerby) this line is slightly interrupted under the point of the beak. In the

Anodon areolatus (Swainson) we have this interruption more distinctly marked, the elevations being larger and more curved, evidently forming an incipient tooth which approaches very closely to the

Alasmodonta marginata (Say), and forms with it a natural link. The next in the chain appears to be the

Alasmodonta rugosa (Barnes), which has an incipient lateral tooth; and that which follows very closely is the

Unio calceolus (Nob.), which has the lateral tooth very slightly more defined than the preceding. In the

Symphynota compressa (Nob.), we have the tooth more perfect and extended, forming a moderately well characterised lateral tooth of the genus *Unio*. The well known

Unio pictorum (Mya pictorum, Lin.) presents us with cardinal and lateral teeth completely formed. In this genus, the *Unio*, we have an infinite variety in the forms of teeth. In the

Symphynota alata (Nob.), the cardinal and lateral teeth are compressed in most specimens; and the next change we find, is in the

Hyria avicularis† (Lam.), in which the cardinal tooth is somewhat

* See Vol. III. p. 442.

† When the animal of this genus shall be examined, it will be found, I have no doubt, to differ from the *Unio*, *Anodonta*, &c. For notwithstanding Lamarck's description, "elles ont intérieurement les impressions musculaires latérales des Nayades," I have discovered that the

lamellar and forms nearly a line with the lateral tooth. The next "nuance" is in the

Symphynota lævissima (Nob.), which possesses lamelliform cardinal and lateral teeth forming nearly a complete arc. Then follows the

Symphynota bialata (Nob.), the uninterrupted curved tooth of which is little more than an elevated line under the ligament and beaks. As far as one may be able to judge from a bad description and very bad drawing, the

Dipsas plicatus (Leach) may be with propriety placed at the end of this suite.

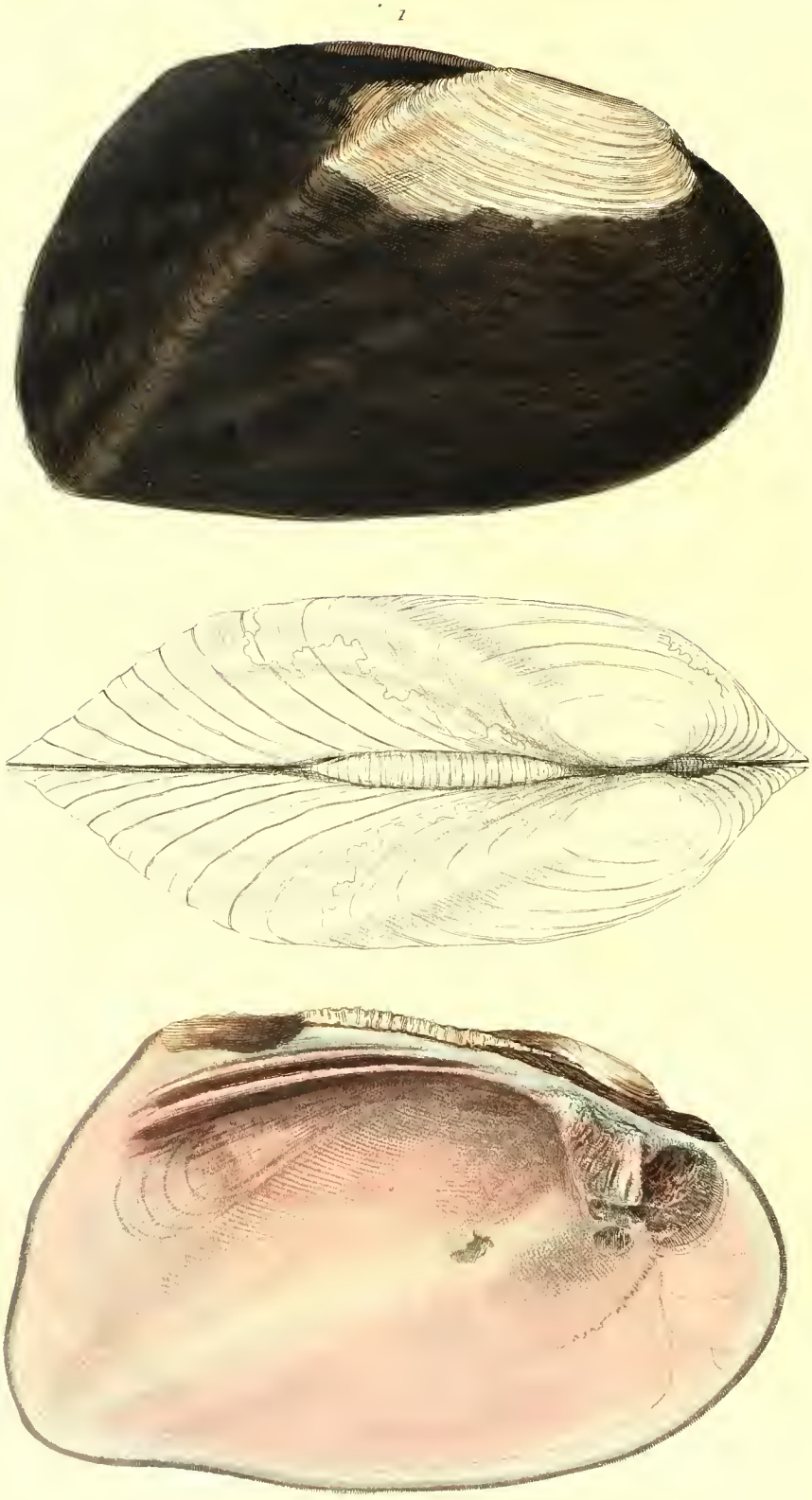
In the *U. oriens* described in this paper, we have a peculiarity in the formation of the termination of the lateral tooth, which is enlarged.

Under the impression, therefore, that the teeth in the Family *Naïades* do not form a sufficient distinctive character to compose genera, I propose to make a "division" of the family, the distinctive character of which will be *valves free* and *valves connate;* the genus *Unio* to include the first, the genus *Symphynota* to include the last. If subsequent groups be necessary, these may be composed of subgenera.

In my catalogue* of species, which I presumed should be considered as established, I gave the *undulatus* of Barnes as a synonym, considering it as a variety of the *plicatus*. Conversing with that naturalist over his cabinet some time before his death, he expressed himself as being very much of that opinion. At that period neither of us had seen a young specimen of this species; very recently I have been fortunate enough to obtain several, and the examination of the beaks of these, which are nearly perfect, convinces me, that although the *undulatus* resembles the *plicatus* in its general characters, yet, that the beaks are sufficiently dissimilar to make them specifically different.

extensor muscle of the foot is attached to the internal base of the cardinal tooth and there forms a remarkable cicatrix, which of course is over the large anterior (posterior of Lam.) cicatrix, while in all the numerous species of Naïades which I have examined, the cicatrix of the extensor muscle has been situated below the large anterior cicatrix. In anatomical structure they must therefore differ.

* Transactions, Vol. III.



Unio trapezoides

Drawn & Eng'd by J.Drayton

Unio Trapezoides. Plate III. fig. 1.

Testâ trapezio simili, inæquilaterali, trânsversâ, postice undulatâ; valvulis crassis; dentibus cardinalibus utriusque valvulæ duplicibus; lateralibus laminatis curvisque; margaritâ purpureâ et iridescente.

Shell trapezoidal, inequilateral, transverse, undulated behind; valves thick; cardinal teeth double in both valves; lateral teeth curved and lamelliform; nacre purple and iridescent.

Hab. Lake St Joseph, Louisiana. J. T. Griffith, Esq.
My Cabinet.
Cabinet of Prof. Vanuxem.

Diam. 1·9, Length 2·6, Breadth 4·3 inches.

Shell trapezoidal, more angular behind, transverse, undulated on posterior half; umbonial slope elevated almost into a carina, anterior to which the undulations are oblique and disposed to lie parallel to each other; posterior slope large and elevated into a carina; sides flattened; substance of the shell thick; beaks slightly prominent and incurved; ligament large, long and slightly curved; epidermis black and wrinkled; cardinal teeth double in both valves, crenate and deeply cleft in the left valve; lateral teeth, long, curved and lamelliform; anterior cicatrices distinct and rough; posterior cicatrices confluent; dorsal cicatrices situated under the posterior part of the cardinal tooth; ventral cicatrix very perceptible; cavity of the beaks wide and deep; nacre dark purple and iridescent.

Remarks.—This highly interesting species came into my possession through the kindness of J. T. Griffith, Esq. of Natchez. It approaches the *U. plicatus** of Lesueur, more nearly than any other species with which I am acquainted; it differs, however, from that species, strikingly, in the colour of the nacre, in the general outline of the shell

* For the authority of this name and author, see Am. Conch. article *Unio crassus*; also Barnes's article in Silliman's Journal, Vol. VI. p. 120.

and in its remarkable square sides. The great peculiarity of this species is in its possession of a small cicatrix (which I propose to call the *ventral cicatrix*) anterior to the central part of the cavity of the shell. In no other species have I ever met with the slightest indication of this cicatrix, although I have examined numerous larger and more globose specimens of various species with this view.

Unio Multiplicatus. Plate IV. fig. 2.

Testâ trapeziali, inæquivalvi, oblique transversâ, maxime undulatâ; valvulis crassissimis; dentibus cardinalibus crassis, lateralibus longis curvisque; margaritâ albâ et iridescente.

Shell trapezoidal, inequivalve, obliquely transverse, much undulated; valves very thick; cardinal teeth thick; lateral teeth long and curved; nacre pearly white and iridescent.

Hab. { Tennessee River. Prof. Vanuxem.
Ohio River. T. G. Lea.
My Cabinet.
Cabinet of Prof. Vanuxem.

Diam. 2·2, Length 3·8, Breadth 5·6 inches.

Shell trapezoidal, obliquely transverse, undulated except near the anterior margin, compressed towards basal and posterior margins; undulations diverge from the umbonial slope and in the superior part curve towards the dorsal margin which is carinate; substance of the shell very thick; beaks slightly prominent and rugose with undulations extending over the umbones which are flattened; ligament large, long and curved; epidermis black and much wrinkled; cardinal teeth thick and sulcate; lateral teeth large, long and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks rather large and rounded; nacre pearly white, iridescent and surrounded by a distinct dark margin.

Remarks.—This fine large species was one of many fine shells

Unio multiplicatus

Drawn & Engd by J Dra

Unio asperimus.

Drawn & Eng'd by J. Dray

brought by Prof. Vanuxem from the western states. It is very nearly allied to the *plicatus* (Lesueur) in its general characteristics, but when the beaks are not much eroded, it may be at once distinguished from that species by the numerous small irregular undulations which surround and cover the beaks, and of which the *plicatus* is entirely destitute except at the very tip of the beaks; where the small folds are entirely unconnected with the large ones. In a very young state no two species, scarcely, can be more different, the *multiplicatus* being entirely covered with undulations, while the *plicatus* possesses none, except the small ones at the tip. In this state it resembles exceedingly the *tuberculatus* of Barnes, and when I received my first specimen, I referred it to that species, considering it a variety, and should most probably have continued to be of that opinion, had I not obtained a large specimen sufficiently perfect to display the irregular undulations in the region of the beaks. The facts mentioned above, show the absolute necessity of studying the young in making ourselves acquainted with the species.

Unio Asperrimus. Plate V. fig. 3.

Testâ sebquadrangulari, inæquilaterali, postice biangulari, natibus ad baseos marginem sulcatâ et nodulis instructâ; valvulis percrassis; natibus elevatis; dentibus cardinalibus prægrandibus, lateralibus magnis subrectisque; margaritâ pulchrâ et iridescente.

Shell sub-quadrangular, inequilateral, biangular behind, sulcated from beaks to basal margin, thick and noduled; valves very thick; beaks elevated; cardinal teeth very large; lateral teeth large and nearly straight; nacre beautifully pearly and iridescent.

Hab. Ohio River. T. G. Lea.
My Cabinet.
Cabinet of T. G. Lea.
Cabinet of Lyceum of Natural History of New York.

Diam. 2·3, Length 3·6, Breadth 4·8 inches.

Shell sub-quadrangular, biangular behind, sulcated from beak to

basal margin, roughly noduled and thick; basal margin emarginate; substance of the shell thick; beaks prominent, retuse; noduled along the umbonial slope and before the furrow, which is smooth; posterior slope covered with nodules; nodules posterior to the furrow are disposed to be transverse and on the umbones erect or recurved; ligament large; epidermis wrinkled and fuscous in adult specimens,—in younger specimens it is yellowish brown with obsolete rays; cardinal tooth very large, widely cleft, sulcated and crested in the left valve, in the right valve emerging from a pit; posterior cicatrices confluent; anterior cicatrices distinct, the great one deep; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks angulated, large and deep; nacre beautifully pearly white and iridescent.

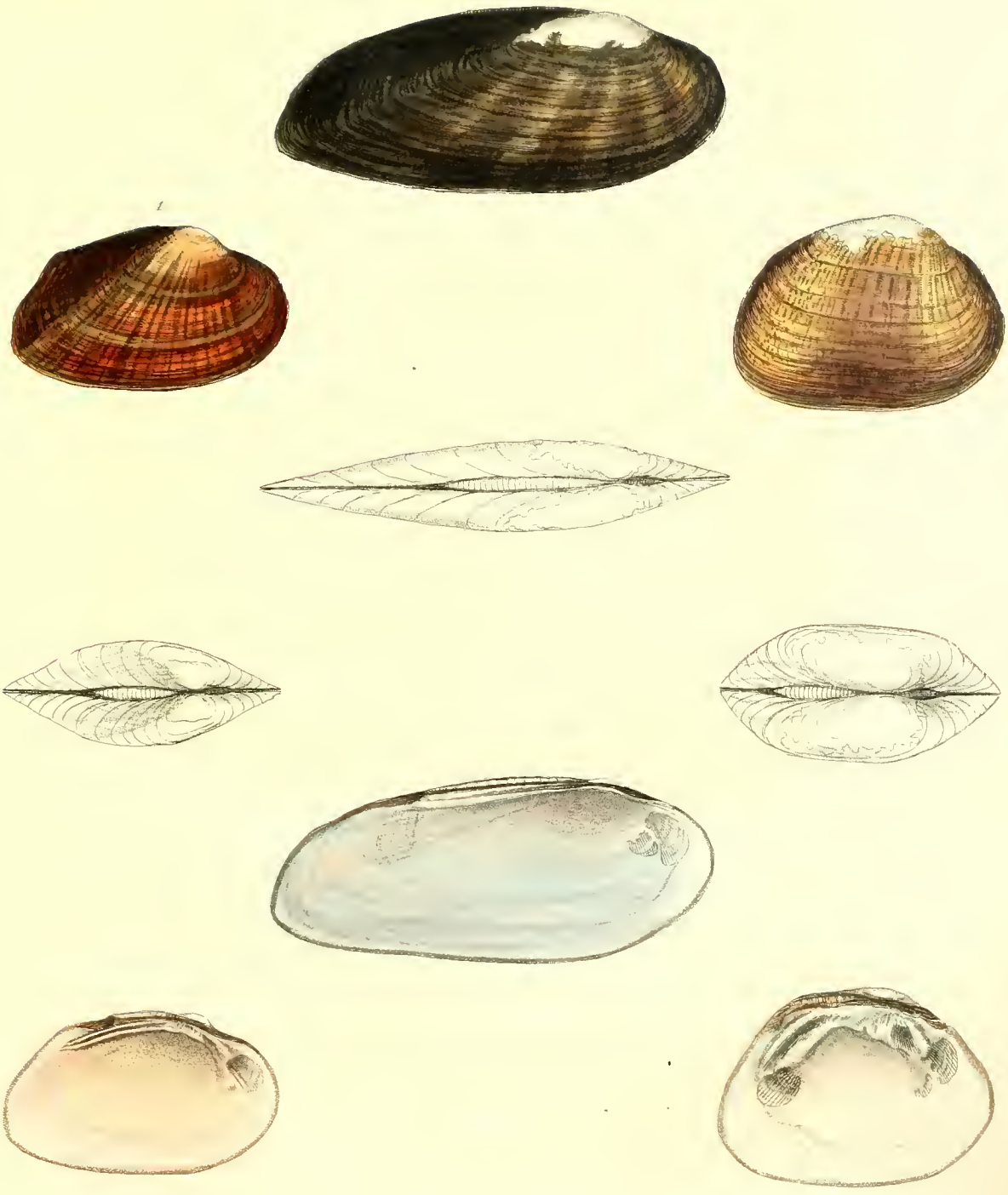
Remarks.—This fine and interesting species is nearly allied to the *U. lacrymosus* (Nob.). It differs from it distinctly in the possession of nodules which are rough and disposed to be erect and transverse. The tubercles of the *lacrymosus* take a direction towards the basal margin, and are similar to tears flowing down the cheek. The posterior margin in the present species is more protruded, while the area of the anterior portion is smaller than that of the lacrymosus. It cannot be mistaken for the *U. metanever* (Rafinesque), which possesses large elevations along the umbonial slope. In younger specimens than the one represented here the basal and posterior margins are more rounded.

Unio Congaræus. Plate VI. fig. 4.

Testâ rhomboideo-ellipticâ, transversâ, inæquilaterali; valvulis tenuibus; natibus subundulatis; dente cardinali obliquo compressoque; dentibus lateralibus longis, et prope terminos posteriores auctis; margaritâ sericeâ et iridescente.

Shell elliptico-rhomboidal, transverse, inequilateral; valves thin; beaks slightly undulated; cardinal tooth oblique, compressed; lateral teeth long and enlarged towards the posterior end; nacre satinlike and iridescent.

Hab. Congaree River, South Carolina.



Unio oriens.

Unio congræus.

Unio brevidens.

Drawn & Eng'd by J.Drayton

My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.
Cabinet of the Academy of Natural Sciences, Philadelphia.

Diam. ·7, Length ·1, Breadth 1·6 inches.

Shell elliptico-rhomboidal, transverse, somewhat flattened at the sides; posterior slope furnished with slight undulations; substance of the shell thin; beaks slightly prominent, and furnished with parallel concentric undulations near the tips; ligament short; epidermis yellow, and yellowish brown; rays green and numerous; cardinal tooth oblique, compressed, and slightly cleft in the left valve—in the right single; lateral teeth long, slightly curved and enlarged towards the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated under the plate, between the cardinal and lateral teeth; nacre satin like, and beautifully iridescent.

Remarks.—I obtained several specimens of this shell, on the shores of the Congaree, at Columbia, S. C. It resembles the *radiatus* (Gmelin) and *complanatus** (Solan.), which species are frequently mistaken for each other, and this may readily be confounded with either of them. It has, like the *radiatus*, many rays, but differs in being more angulated on the umbonial slope, and in measuring less from the posterior dorsal margin to the basal margin. It differs from the *complanatus* in its rays, and in having slight undulations on the posterior slope. It is more diminutive in size than either, not being more in volume than one-fifth of the *complanatus* from the same locality.

Unio Oriens. Plate VI. fig. 5.

Testâ longo-ovatâ, transversâ, inæquilaterali, compressâ et radiis pulcherrimis pictâ, valvulis tenuibus; natibus subprominulis et retusis; dentibus cardinalibus

* For reclamation of this species, see Vol. III. p. 416.

parvis et imperfectis, lateralibus imperfectis et indivisis; margaritâ cæruleo-albâ, iridescente, et in natium cavo purpureâ.

Shell long-ovate, transverse, inequilateral, compressed and beautifully rayed; valves thin; beaks scarcely prominent and retuse; cardinal teeth small and imperfect; lateral teeth imperfect and divided; nacre bluish white, iridescent and purple in the cavity of the beaks.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of R. Peter, Pittsburgh.
Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. ·5, Length 1·1, Breadth 2·8 inches.

Shell long-ovate, transverse, compressed; substance of the shell very thin; beaks scarcely prominent, and situated towards the anterior margin; ligament linear; epidermis slightly wrinkled, yellowish, with oblique interrupted green rays, which enlarge posteriorly; cardinal teeth very imperfect; lateral teeth straight, very imperfect, (having little or no longitudinal division, even in the left valve) enlarged at posterior termination; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks wide and very shallow; nacre bluish white, iridescent, purple in the cavity of the beaks.

Remarks.—The specimen which is here described and figured, was sent to me three or four years since, and has never ceased to excite in me great interest and attention. The very imperfect state of the teeth compelled me to doubt of the propriety of erecting it into a new species, although the specimen bore no appearance of a malformation in any other part, however different it was from other species of the family I had seen. Two other specimens, one of which is young, having recently come into my possession, prove to possess precisely the same characters in every respect, and the only difficulty which now stood in the way of giving it a place in our systems was to determine its *genus!* It appears to me, for the present, most proper to place it with the *Uniones*. It cannot be placed with the *Anodonta* of Lam. for he describes that genus as having "cardo linearis edentulus." It would be equally difficult to class it with the *Alasmodonta* of Say, for

that conchologist says, "hinge with a primary tooth in each valve." In the *oriens* the cardinal and lateral teeth are equally imperfect, and in this respect it resembles the *U. soleniformis* (Nob.), though much less defined. Under these circumstances, it appeared necessary to give it a place with the Uniones.

Unio Brevidens. Plate VI. fig. 6.

Testâ subtriangulari, inæquilaterali, transversâ; valvulis crassis; dentibus cardinalibus modicis, lateralibus curvis, brevibus, crassisque; margaritâ albâ.

Shell subtriangular, inequilateral, transverse; valves thick; cardinal teeth rather small; lateral teeth curved, short, and thick; nacre pearly white.

Hab. Ohio, William Cooper.
My Cabinet.
Cabinet of Lyceum of Natural History of New York.

Diam. ·8, Length 1·2, Breadth 1·7 inches.

Shell sub-triangular, angular behind, transverse; umbonial slope curved; sides flattened; substance of the shell thick; beaks slightly prominent; ligament short; epidermis yellow, wrinkled; rays small, slightly curved and interrupted; cardinal tooth rather small, slightly elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth curved, short and thick, posterior and anterior cicatrices both distinct; the smaller posterior one being placed directly over the larger and beneath the point of the lateral tooth; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks arched, shallow; nacre pearly white.

Remarks.—For this interesting and fine species we are indebted to the liberality of the members of the Lyceum of Natural History of New York, who, in accordance with their known zeal in the promotion of natural science, promptly passed a vote to permit their new fluviatile shells (herein described) to be described for, and inserted in our Transactions, under the impression that science would be benefited by

their being embodied in one paper with those which I was about to publish. This species somewhat resembles *U. triangularis* of Barnes. It differs from it in being less ventricose, more ponderous, possessing thicker teeth and in the rays which are interrupted indistinct lines.

Unio Pustulosus. Plate VII. fig. 7.

Testâ modice productâ, æquilaterali, inflatâ, dimidio postico tuberculatâ; valvulis crassis; natibus prominentibus et ad apices granulatis; dentibus cardinalibus subgrandibus; lateralibus brevibus, crassis, rectisque; margaritâ albâ et iridescente.

Shell rather elongated, equilateral, inflated, tuberculated on posterior half; valves thick; beaks elevated and granulated at tip; cardinal teeth rather large; lateral teeth short, thick and straight; nacre pearly white and iridescent.

Hab. { Ohio, T. G. Lea.
Alabama river, Judge Tait.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of Peale's Museum.

Unio verrucosus. Var. *b?* Barnes.

Diam. 1·4, Length 2·2, Breadth 2·1 inches.

Shell rather elongated, equilateral, inflated, irregularly tuberculated on posterior half, but not on the first and second growths; tubercles generally large; substance of the shell thick; beaks elevated and granulated at tip; ligament short and thick; epidermis bright brown; a single broad interrupted ray passes from the beak nearly to the centre of the disk; cardinal tooth rather large and widely cleft in the left valve—single and emerging from a pit in the right valve; lateral teeth short, thick and straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal

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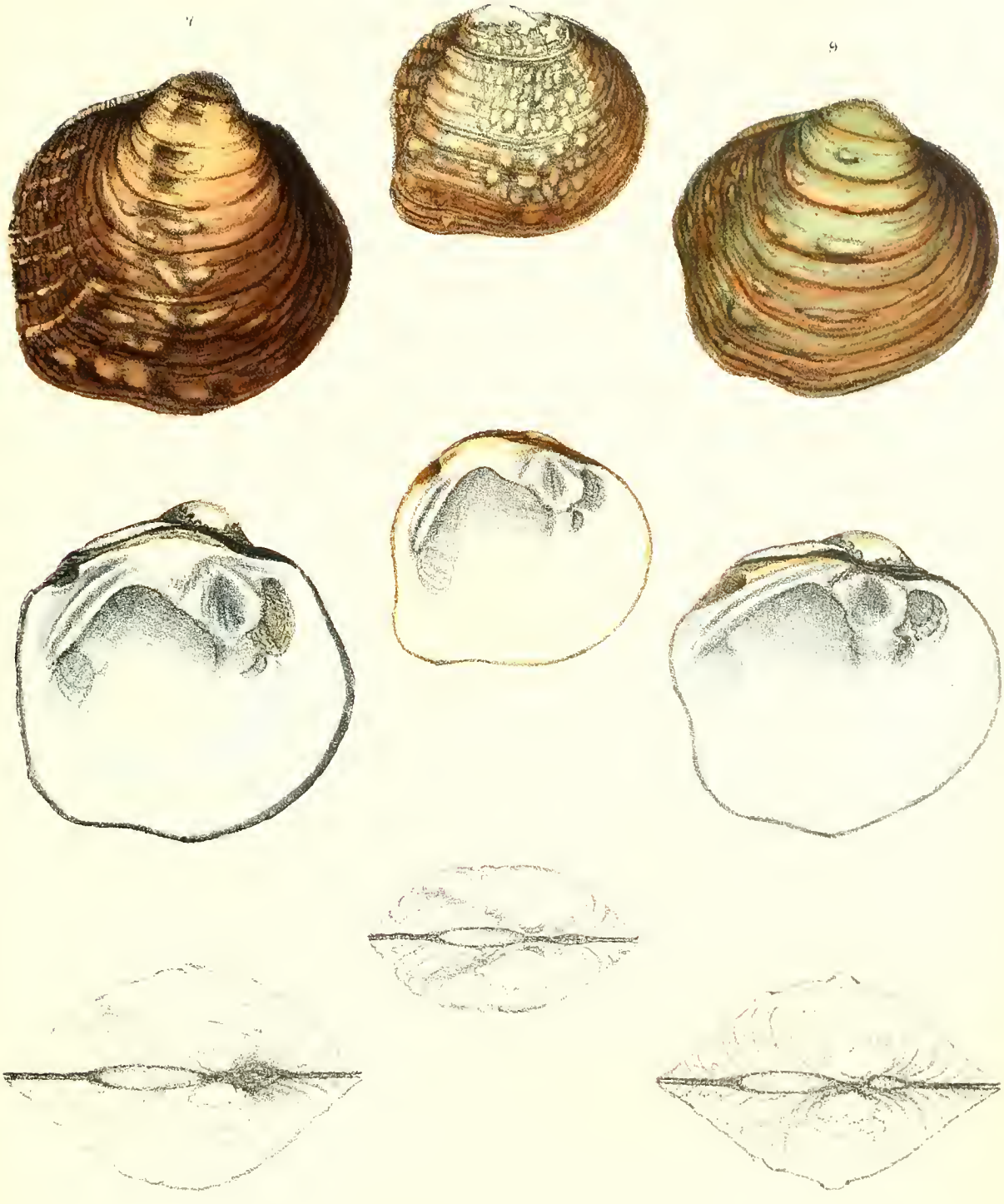


Unio pustulosus.

Unio stapes.

Unio pustulatus.

Drawn by J Drayton .

tooth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species has heretofore been considered as the *Verrucosus* of Barnes. Although the general form resembles the *Verrucosus*, it differs from it in several essential characters. It has not the beautiful recurved, and finely undulated beaks, nor has it the dark chocolate coloured nacre of the true *Verrucosus*. It has a large interrupted ray across the centre of the disk, which is absent in the other, and the tubercles are more in the form of blisters. In the *Verrucosus*, the first and second growths are furnished with tubercles; in the *Pustulosus*, they are not. Objections may be made to the use of colour of nacre as a character. It may be safely used, when on examination of many specimens, there is no appearance of fading away by tints into another colour. The *U. torsus* (Rafinesque) presents us always with a rich chocolate nacre. The *U. rectus* (Lam.) varies from rich purple and salmon through all the tints of these colours to perfect white, and the same may be said of the *U. cuneatus* (Barnes) and *U. complanatus* (*Mya complanata*, Solan.). The *U. circulus* (Nob.) varies from perfect white to dark pink. These variations of colours are frequent in this genus. Of the numerous specimens of *Verrucosus*, I have never seen one which was not chocolate coloured. In the *Pustulosus*, I have never seen the nacre other than white.

Unio Stapes. Plate VII. fig. 8.

Testâ triangulari, subæquilaterali, postice valde angulatâ, tuberculatâ; valvulis crassis; dentibus cardinalibus subgrandibus; lateralibus brevibus, a cardinalibus separatis; et versus baseos marginem vergentibus; margaritâ albâ.

Shell triangular, nearly equilateral, very angular behind, tuberculated; valves thick; cardinal teeth rather large; lateral teeth short, distinct from the cardinal teeth and pointing to the basal margin; nacre pearly white.

Hab. Alabama river, Judge Tait.

My Cabinet.

Diam. ·9, Length 1·5, Breadth 1·6 inches.

Shell triangular, nearly equilateral, very angular behind, and rounded before; anterior portion furnished with triangular formed tubercles, the apices of which point to basal margin; portion immediately before umbonial slope free from tubercles; umbonial slope elevated and tuberculated from the beaks to the margin; posterior slope truncate, undulated, nearly perpendicular, flat, with the exception of a small portion of the margin behind the ligament; umbones flattened; substance of the shell thick; beaks prominent; ligament short and thick; epidermis yellow, slightly wrinkled, and furnished with indistinct, small. green pencil marks in the place of rays; cardinal tooth rather large, elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth very short, straight and pointing to the basal margin; the cardinal and lateral teeth are separated by a flat plate; posterior and anterior cicatrices both distinct, the smaller posterior one being placed directly over the larger, and beneath the point of the lateral tooth; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angulated; nacre very pearly and iridescent.

Remarks.—This very curious and interesting shell was among the many fine specimens sent me by Judge Tait, to whose kindness I am under great obligations for several of the new species here described. The present species, in outline, is an anomaly in the family Naiades. The truncature behind is almost as abrupt as that of any *Donax*. This truncature gives the shell the form of a stirrup, and causes the lateral teeth to take a direction (towards the basal margin) peculiar to this species. The triangular form of the tubercles, particularly on the superior anterior part, is so peculiar as to render it impossible to confound it with any other species.

Unio Pustulatus. Plate VII. fig. 9.

Testâ suborbiculari, æquilaterali, inflatâ, margine posteriori emarginatâ; valvulis crassis, et duabus tuberculorum seriebus instructis; dentibus cardinalibus magnis; lateralibus brevibus subrectisque; margaritâ albâ et iridescente.

Shell nearly circular, equilateral, inflated, posteriorly emarginate; valves thick and furnished with two rows of tubercles; cardinal teeth large; lateral teeth short and nearly straight; nacre pearly white and iridescent.

Hab. { Ohio, T. G. Lea.
Tennessee, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences of Philadelphia.

Diam. 1·3, Length 1·9, Breadth 2·1 inches.

Shell nearly circular, equilateral, inflated, posteriorly emarginate, furnished with two vertical rows of tubercles on each valve, one in a direct line from the beaks to the basal margin, the other along the umbonial slope; those of the latter resemble pustules. The first tubercle appears on the third growth; the fourth and each successive growth have two parallel to each other. Posterior margin granulate; substance of the shell thick; beaks elevated, slightly recurved, and granulate at the tip; ligament short and thick; epidermis yellowish brown and rather smooth; cardinal tooth large, elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth short and nearly straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species somewhat resembles the *U. verrucosus* (Barnes). Var. *b*, erected into a new species in this paper under the name of *pustulosus*. It differs in being more transverse and in being destitute of the broad single ray which passes from the beak of the latter. In the arrangement of the tubercles it is altogether different;

the *pustulatus* having a row, which resembles the *cornutus* in regularity. These elevations however in the *cornutus* alternate in the two valves, while in this species they are antagonist. In very perfect young specimens, a minute tubercle may sometimes be observed on the first growth. The elevations along the umbonial slope have more resemblance to pustules, than those of the anterior row.

UNIO LENS. Plate VIII. fig. 10.

Testâ lenticulari, subventricosâ, æquilaterali; valvulis subcrassis; dentibus cardinalibus magnis; lateralibus brevibus subrectisque; margaritâ albâ, raro roseâ.

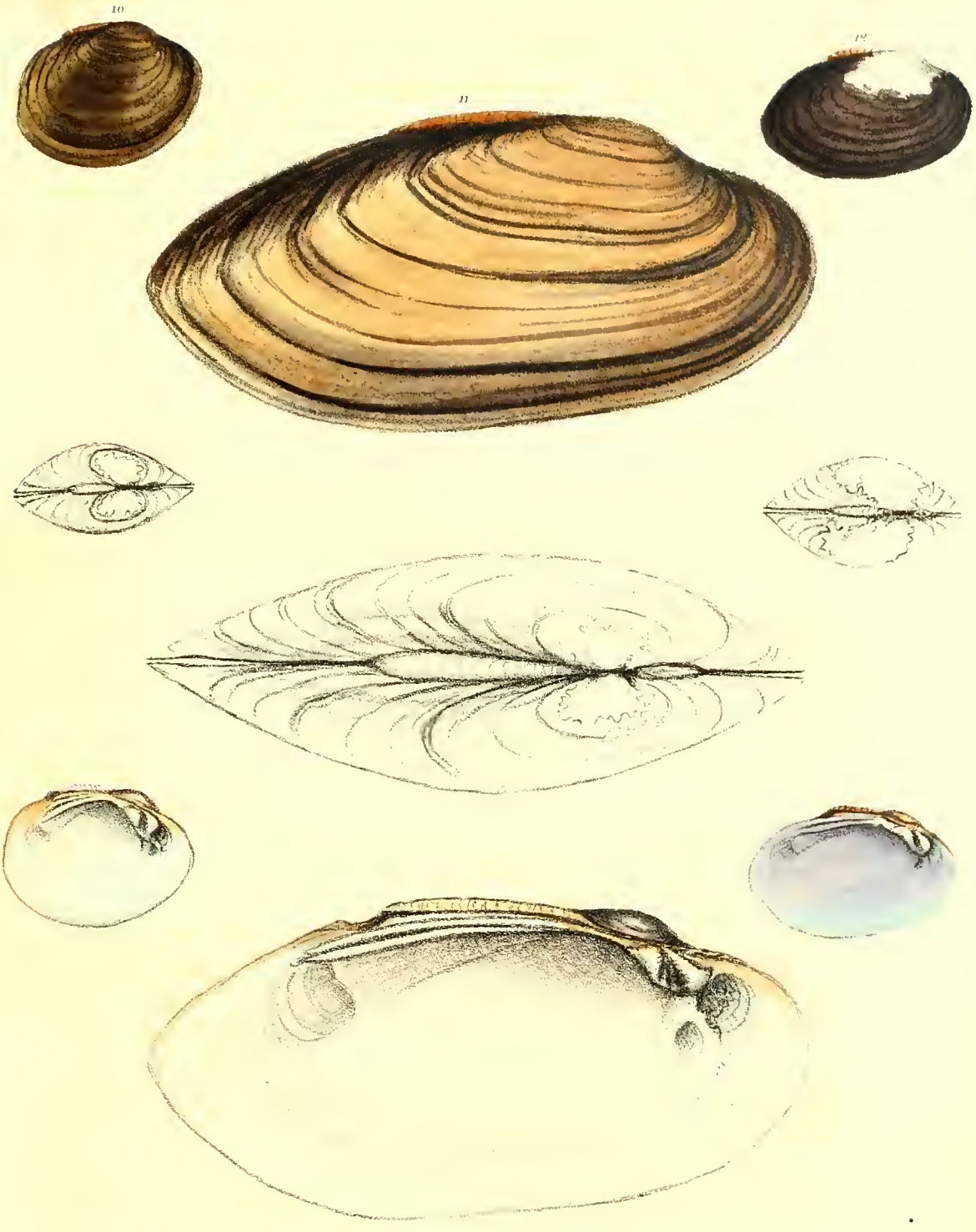
Shell lenticular, subventricose, equilateral; valves somewhat thick; cardinal teeth large; lateral teeth short and nearly straight; nacre white, rarely rose coloured.

Hab. { Ohio, T. G. Lea.
Tennessee, Professor Vanuxem.
My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.

Diam. ·6, Length ·9, Breadth 1·2 inches.

Shell lenticular, somewhat ventricose, equilateral; substance of the shell rather thick; beaks slightly prominent, undulated at tip; ligament short and thick; epidermis smooth, anterior to the umbonial slope brown, posterior yellowish; cardinal teeth large and oblique, deeply cleft in the left valve; lateral teeth short and nearly straight, in the left valve the superior division is much the smallest; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks angular and somewhat deep; nacre white, pearly and iridescent, sometimes rose coloured.

Remarks.—This species very closely resembles the *U. circulus*



Unio lens.

Unio glans.

Unio anadontoides.

Drawn by J. Drayton.

(Nob.). It differs from it, however, in being less ventricose, in having the beaks less elevated, in being usually more transverse, and in having a paler brown colour. In the *circulus*, the line of division of the brown and yellow is more distinct. In the *lens*, the brown is sometimes replaced, over the whole surface, by yellow.

Unio Anodontoides. Plate VIII. fig. 11.

Testâ angusto-ellipticâ, transversâ, inæquilaterali, inflatâ; valvulis subcrassis; natibus prominulis; dentibus cardinalibus in valvulis ambabus duplicibus et valde erectis; dentibus lateralibus longis, a cardinalibus separatis, subcurvatis; margaritâ albâ et colore salmonis parum tinctâ.

Shell narrow-elliptical, transverse, inequilateral, inflated; valves somewhat thick; beaks slightly prominent; cardinal teeth double in both valves and very erect; lateral teeth long, slightly curved and separate from the cardinal teeth; nacre pale salmon and white.

Hab. { Mississippi river, T. W. Robeson.
Alabama river, Judge Tait.
Ohio river, T. H. Taylor.
My Cabinet.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of Professor Vanuxem.
Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. 1·5, Length 1·9, Breadth 4·1 inches.

Shell narrow-elliptical, much inflated, sometimes almost cylindrical; substance of the shell somewhat thick; beaks slightly prominent, placed near the anterior margin; ligament long, narrow, and nearly straight; epidermis yellowish, very smooth, shining, posterior to the umbonial slope fuscous, rarely rayed; cardinal tooth double in both valves, compressed, elevated; lateral teeth lamellar, very long, slightly curved and separated from the cardinal teeth by the absence of a plate; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated across the cavity of the beaks; cavity of the beaks rounded, and not deep; nacre salmon or white and iridescent.

Remarks.—This singularly formed Unio resembles in its exterior an *Anodonta*, having a remarkably smooth epidermis and possessing in some degree the exterior of the *A. cataracta* (Say). It is easily distinguished from any described species. In some specimens the arcuation of the basal margin is so great that it might almost be taken for a malformation.

Unio Glans. Plate VIII. fig. 12.

Testâ ovato-ellipticâ, transversâ, inæquilaterali, inflatâ; valvulis crassis; dentibus cardinalibus subgrandibus et elevatis, lateralibus, laminatis rectisque; margaritâ purpureâ.

Shell ovate-elliptical, transverse, inequilateral, inflated; valves thick; cardinal teeth rather large, elevated; lateral teeth straight and lamelliform; nacre purple.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of S. W. Conrad.

Diam. ·7, Length ·8, Breadth 1·3 inches.

Shell ovate-elliptical, transverse, inflated; substance of the shell rather thick; beaks somewhat prominent; ligament small; epidermis black, or dark brown, and sometimes rayed; cardinal teeth rather large and elevated, in the left valve double and obliquely and deeply cleft, in the right single, three sided, and pointed; lateral teeth straight and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide and subangulated; nacre purple, except along the anterior and basal margins.

Remarks.—Although this small shell has no strikingly peculiar character, it is nevertheless of a different species from any I have seen. In form, it has more resemblance to *U. zigzag* (Nob.), than to any other species, but differs altogether in the epidermis and nacre, being generally destitute of rays, and having a purple nacre.

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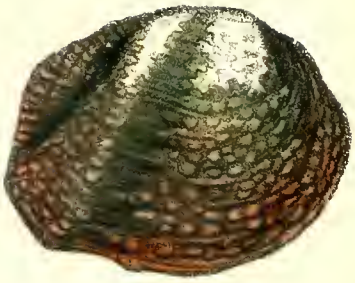
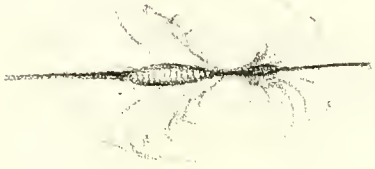
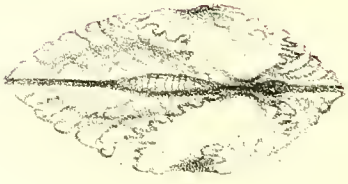
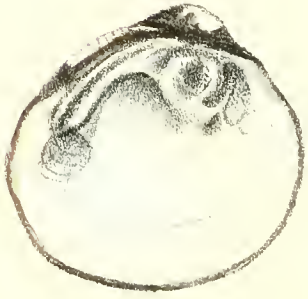
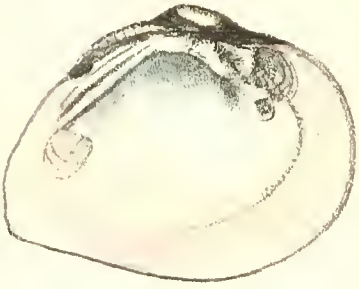
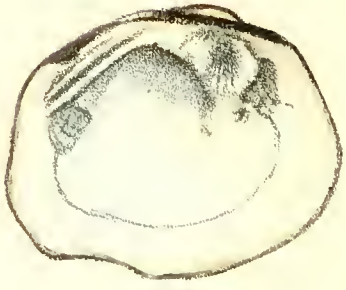












Unio elegans

Unio ebenus.

Unio asper.

Drawn by J. Drayton.

Unio Elegans. Plate IX. fig. 13.

Testâ subtriangulari, subæquilaterali, per umbones complanatâ; latere antico valvularum crassiori; epidermide luteo-viridi; radiis numerosis ex lineis angulatis compositis; natibus complanatis incurvisque; dentibus cardinalibus elatis grandibusque, lateralibus subrectis; margaritâ albâ et iridescente, raro roseâ.

Shell subtriangular, nearly equilateral, flattened over the umbones; valves thick before, thinner behind; epidermis yellowish green with numerous rays formed of zigzag lines; beaks incurved and flattened; cardinal teeth large and elevated; lateral teeth nearly straight; nacre pearly white and iridescent, rarely rose coloured.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of H. C. Carey.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of the American Philosophical Society.

Diam. 1, Length 1·5, Breadth 1·9 inches.

Shell subtriangular, nearly equilateral, acutely angular behind; flattened over the umbones; umbonial slope carinate; posterior slope much flattened; substance of the shell thick before, thinner behind; beaks flattened, incurved, nearly touching; ligament short and thick; epidermis yellowish green, with numerous rays, formed of zigzag lines, diverging from the beaks to all parts of the margin; basal margin slightly emarginate; cardinal tooth large, elevated, and widely cleft in the left valve, and emerging from a pit in the right valve; lateral teeth nearly straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks rounded; nacre pearly white, (rarely pink) and iridescent.

Remarks.—This interesting and beautiful species has been considered as a variety of the *U. donaciformis* (Nob.). I had but a single

and imperfect specimen of this shell when I described the *donaciformis*, and I presumed it to be merely a variety of that shell. Subsequently, my attention being drawn particularly to it, I procured some of all the different growths, and among them the beautiful specimen now figured, which is the only one I have seen of a pink colour. On an examination of these, I could no longer doubt of its being distinct; but some doubts have arisen in my mind whether the *donaciformis* may not be a variety of the *U. zigzag* (Nob.). The specimen described as *donaciformis* is a very fine and perfect one, and if it be a true species is the only one I have seen. Among the numerous specimens of *zigzag* which I have examined, none have had those perfect and beautifully pointed beaks of the *donaciformis;* should future specimens fully establish the *donaciformis*, its natural place will be between the *zigzag* and the present described species. These observations it is hoped will draw the attention of conchologists to this species, with the expectation of being able, by examining many specimens, to decide upon the question.

Unio Ebenus. Plate IX. fig. 14.

Testâ subelliptică, oblique recurvâ, inæquilaterali, ventricosâ; valvulis crassis; natibus prominentibus et subterminalibus; epidermide nigro-fuscâ, sed post nates luteâ; dentibus cardinalibus magnis, lateralibus magnis curvisque; margaritâ albâ.

Shell subelliptical, obliquely recurved, inequilateral, ventricose; valves thick; beaks elevated and nearly terminal; epidermis blackish brown, behind the beaks yellow; cardinal teeth large; lateral teeth large and curved; nacre pearly white.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.

Diam. 1·1, Length 1·5, Breadth 1·6 inches.

Shell subelliptical, obliquely recurved, inequilateral, very ventricose;

substance of the shell very thick; beaks nearly terminal and very much elevated; ligament rather short and thick; epidermis blackish brown, behind the beaks on the *second growth* it is yellow; tip of the beaks yellowish; cardinal teeth large and oblique, being in a line nearly parallel to the lateral tooth which is thick and slightly curved: posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks deep and angulated; nacre pearly white and iridescent.

Remarks.—This species, which seems to be peculiar in the yellow mark behind the beaks, resembles the *U. mytiloides* (Rafin.) and might easily be mistaken for a ventricose variety of that species where the beaks are so much eroded as to have destroyed the second growth. A young individual of second growth is represented in the plate to exhibit the curious distribution of colour. The posterior third is yellow and the remainder green, the line of separation being very distinct. Those of three growths usually have no trace of yellow on the third growth which takes a brown colour. The first growth, which may be considered the tip of the beaks, is usually yellow or yellowish green over its whole surface. The largest specimen given in the plate is not more than one fourth the size it is sometimes found. It is selected, because it is the largest I have seen with the beaks sufficiently perfect to exhibit the peculiar yellow colour of this part.

UNIO ASPER. Plate IX. fig. 15.

Testâ subtriangulari, inæquilaterali, postice angulatâ, valde tuberculatâ; valvulis crassis; dentibus cardinalibus subgrandibus; lateralibus aliquantulum curvatis; margaritâ albâ.

Shell subtriangular, inequilateral, angular behind, much tuberculated; valves thick; cardinal teeth rather large; lateral teeth slightly curved; nacre pearly white.

Hab. Alabama river, Judge Tait.

My Cabinet.

Diam. ·9, Length 1·4, Breadth 1·8 inches.

Shell subtriangular, angular behind and rounded before, covered with small rough tubercles except in a furrow which passes from the beak obliquely to the basal margin which is there arcuate; the tubercles along the posterior slope arrange themselves into a series of undulations as far as the beaks; substance of the shell thick; beaks slightly prominent: ligament short and thick; epidermis brown and wrinkled; cardinal tooth rather large, slightly elevated and widely cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth small, slightly curved in a direction over the cardinal teeth; posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal tooth within the cavity; cavity of the beaks deep and angulated; nacre very pearly and iridescent.

Remarks.—The *asper* is more covered with tubercles than any species I have seen, these being small and numerous. It bears some resemblance to *U. tuberculatus* (Barnes), and *U. lacrymosus* (Nobis.). It differs from the *tuberculatus* in outline, and in possessing a furrow passing from the beaks to the basal margin. It differs from the *lacrymosus* in the form of the tubercles (which in that species so much resemble flowing tears) and in the roughness and colour of the exterior.

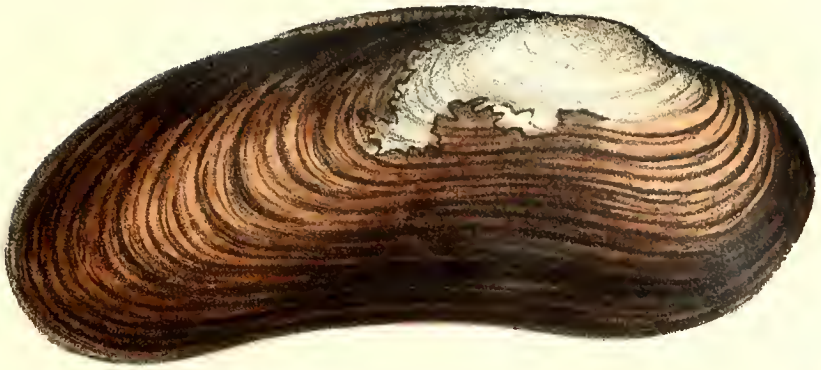
Unio Fabalis. Plate X. fig. 16.

Testâ subellipticâ, transversâ, inæquilaterali, crassâ; valvulis crassis; radiis capillaribus undantibusque; dentibus cardinalibus pàrvis; lateralibus brevibus, crassis, et in termino postico auctis; margaritâ albâ et iridescente.

Shell subelliptical, transverse, inequilateral, thick; valves thick; rays hair-like and undulating; cardinal teeth small; lateral teeth short, thick and enlarged towards the posterior end; nacre pearly white and iridescent.

Hab. Ohio river, T. G. Lea.

17



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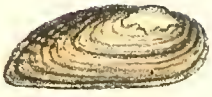
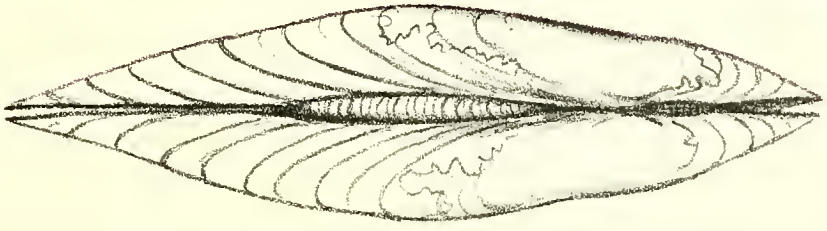
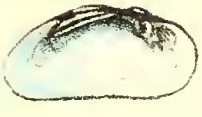
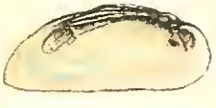








Unio solenæformis.

Unio acutissimus.

Unio fabalis

Drawn by Braxton

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of R. E. Griffith, M.D.
Cabinet of Academy of Natural Sciences.

Diam. ·3, Length ·5, Breadth 1 inch.

Shell subelliptical, transverse, thick; substance of the shell thick; beaks slightly prominent; ligament short; epidermis dark, and finely wrinkled; rays green, hair-like, and undulating, particularly on the posterior half; cardinal tooth double, and deeply cleft in the left valve and single in the right; lateral teeth short, straight, thick and enlarged towards the posterior end; posterior and anterior cicatrices both distinct, the smaller posterior one being placed directly over the larger and beneath the point of the lateral tooth; dorsal cicatrices situated in the centre of the cavity of the beaks; cavity of the beaks shallow and arched; cavity of the shell small and irregularly undulated; nacre pearly white and iridescent.

Remarks.—This little species first attracted my attention about three years since, when I had seen but a single specimen. Although a very small shell, I felt satisfied it possessed the characters of an adult, and my curiosity being much excited in regard to it, I made many efforts to obtain other individuals. For several of these I am indebted to the kindness of Dr Hildreth of Marietta and to Mr Robert Peter and J. S. Craft, Esq. of Pittsburg. The *fabalis* most resembles the *parvus* of Barnes. It has nearly the same size and outline; but differs much in the thickness of the valves and in the beaks. The *fabalis* is covered with rays, the *parvus* has none.

Unio Soleniformis. Plate X. fig. 17.

Testâ angusto-elliptică, transversâ, compressâ, inæquilaterali, ad finem utrumque rotundatâ; valvulis tenuibus; natibus prominulis; valvulâ utrâque tuberculum

parvum et simplicem in loco dentis cardinalis habente; dentibus lateralibus, longis, rectis, et valde imperfectis; margaritâ cæruleo-albâ et iridescente.

Shell narrow-elliptical, transverse, compressed, inequilateral, rounded at both ends; valves thin; beaks slightly prominent; cardinal tooth a simple, small tubercle in both valves; lateral teeth long, straight and very imperfect; nacre bluish white and iridescent.

Hab. Ohio, T. G. Lea.

My Cabinet.

Cabinet of Dr Hildreth, Marietta, Ohio.

Diam. 1·1, Length 1·7. Breadth 4·3 inches.

Shell narrow-elliptical, transverse, rounded at both ends, compressed from the beaks to the basal margin over the umbones, slightly arcuated on the basal margin; posterior margin much compressed, substance of the shell thin; beaks minutely undulated, slightly prominent and approaching the anterior margin; ligament long and thick; umbones and inferior parts flattened; umbonial slope rounded and elevated; epidermis very dark brown and wrinkled; cardinal tooth formed of a simple small tubercle in both valves, larger in the right valve: lateral teeth straight, and so imperfect as to be divided, even in the left valve, only near the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated under the plate between the cardinal and lateral teeth; cavity of the beaks wide and shallow.

Nacre bluish white and iridescent.

Remarks.—A single specimen of this extraordinary and highly interesting shell came into my possession in 1827. The outline and teeth presented such an anomaly, that I was induced when I published my other memoirs on this family to lay it aside until I could better satisfy myself in regard to it. It was a very old individual, and I feared the peculiar characters it presented might have been produced by malformation and extreme age. After two or three years of unwearied attempts, I fortunately procured from Mr T. H. Taylor of Louisville a junior and an adult specimen, both exceedingly perfect, the latter of which is here represented. This proteus family seems destined to perplex the zoologist and to lead him into an inexplicable labyrinth. The pre-

sent species forms a natural link between *Unio* and *Anodonta*, by means of this imperfect lateral tooth.

Unio Acutissimus. Plate X. fig. 18.

Testâ angusto-ellipticâ, inæquilaterali, postice acute angulatâ; undulis a clivo umboniali divaricantibus; natibus prominulis; valvulis tenuissimis; dentibus cardinalibus parvis, lateralibus longis rectisque; margaritâ tenuissimâ, colore salmonis tinctâ.

Shell narrow-elliptical, inequilateral, transverse, acutely angulated behind, with undulations diverging from the umbonial slope; beaks slightly prominent; valves very thin; cardinal teeth small; lateral teeth long and straight; nacre salmon-coloured and very thin.

Hab. Alabama river, Judge Tait.
My Cabinet.

Diam. ·4, Length ·5, Breadth 1·1 inches.

Shell narrow-elliptical, transverse, acutely angulated behind, with undulations diverging from the umbonial slope; substance of the shell very thin; beaks slightly prominent and placed about one third the distance from anterior margin; ligament linear; epidermis yellow, smooth and shining; cardinal teeth small and single in both valves; lateral teeth long and straight; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the beaks wide and shallow, nacre salmon-coloured and very thin.

Remarks.—This minute shell, among the smallest of the species, is most nearly allied in outline to *U. anodontoides*. It differs from it in having undulations, and is totally dissimilar in point of magnitude.

Unio Varicosus. Plate XI. fig. 20.

Testâ subellipticâ, obliquâ, postice compressâ, varicibus transversis et concentricis instructâ; valvulis præcrassis; natibus subterminalibus, prominentibus, incurvis; dentibus cardinalibus modicis; lateralibus longis, magnis et subrectis; margaritâ albâ.

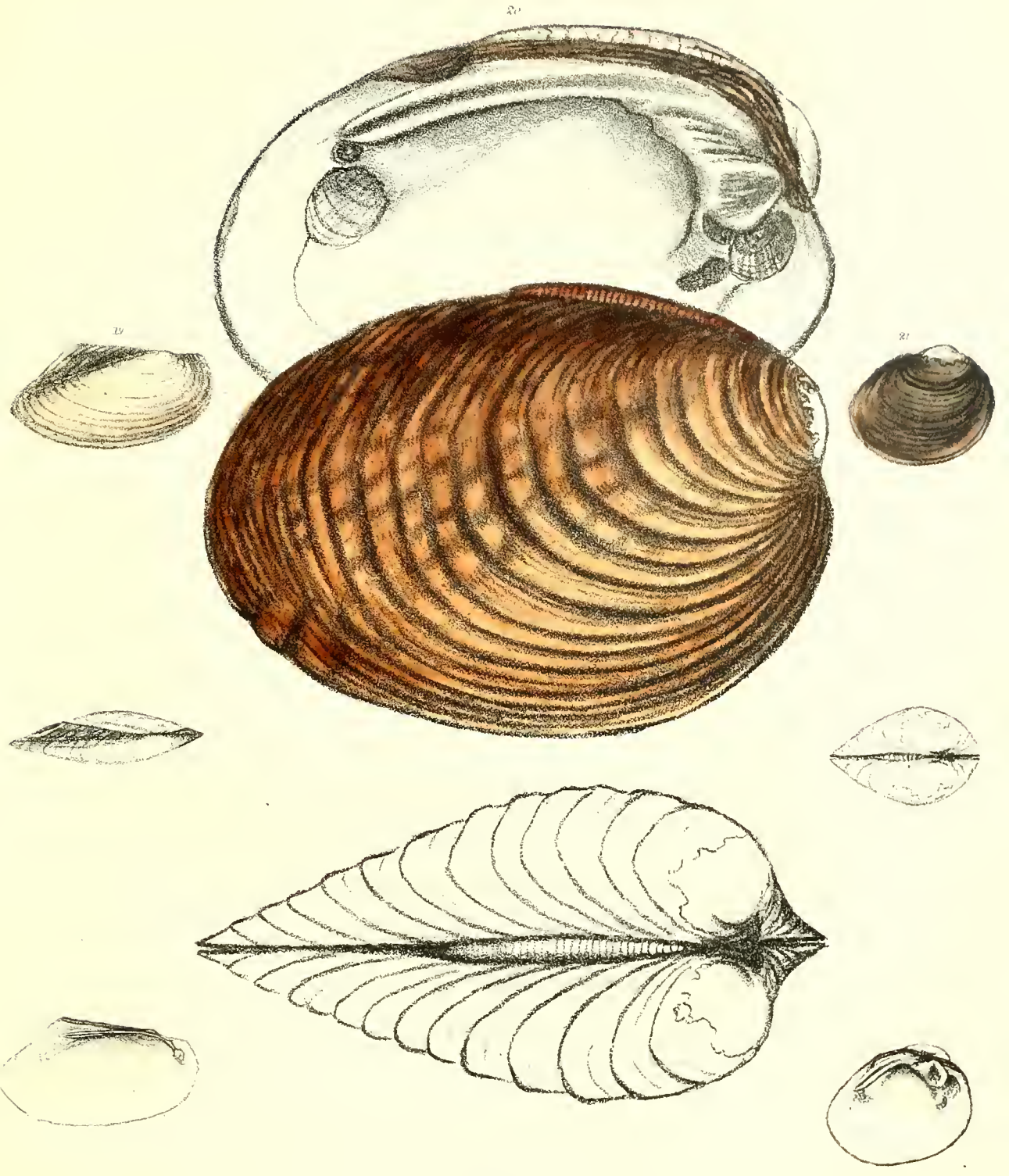
Shell subelliptical, oblique, compressed behind, varicose, with transverse concentric elevations; valves very thick; beaks nearly terminal, elevated, incurved; cardinal teeth rather small; lateral teeth long, large and nearly straight; nacre pearly white.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Prof. Vanuxem.
Cabinet of P. H. Nicklin.

Diam. 2·1, Length 3, Breadth 4·2 inches.

Shell subelliptical, oblique, compressed and rounded behind, varicose from near the beak to basal margin, with transverse concentric elevations along the lines of successive growth; substance of the shell very thick; beaks nearly terminal, elevated, incurved; ligament long and large; epidermis reddish brown; cardinal tooth rather small, direction same as lateral tooth, widely cleft in the left valve, in the right valve emerging from a pit; lateral teeth long, large and nearly straight; anterior and posterior cicatrices both distinct; dorsal cicatrices situated on the lower part of the cardinal tooth, and on the under side of the plate between the cardinal and lateral teeth; cavity of the beaks rather deep and rounded; nacre pearly white.

Remarks.—This species most resembles the *U. Æsopus* (Green). It differs from it, however, in being rounded behind, in the beaks being nearly terminal, in the varices being less elevated and more transverse; and in the absence of elevations along the umbonial slope. There being no varicose undulations on young individuals, which are generally obscurely radiated, it is difficult for the unpractised eye to recognize the species to which they belong.

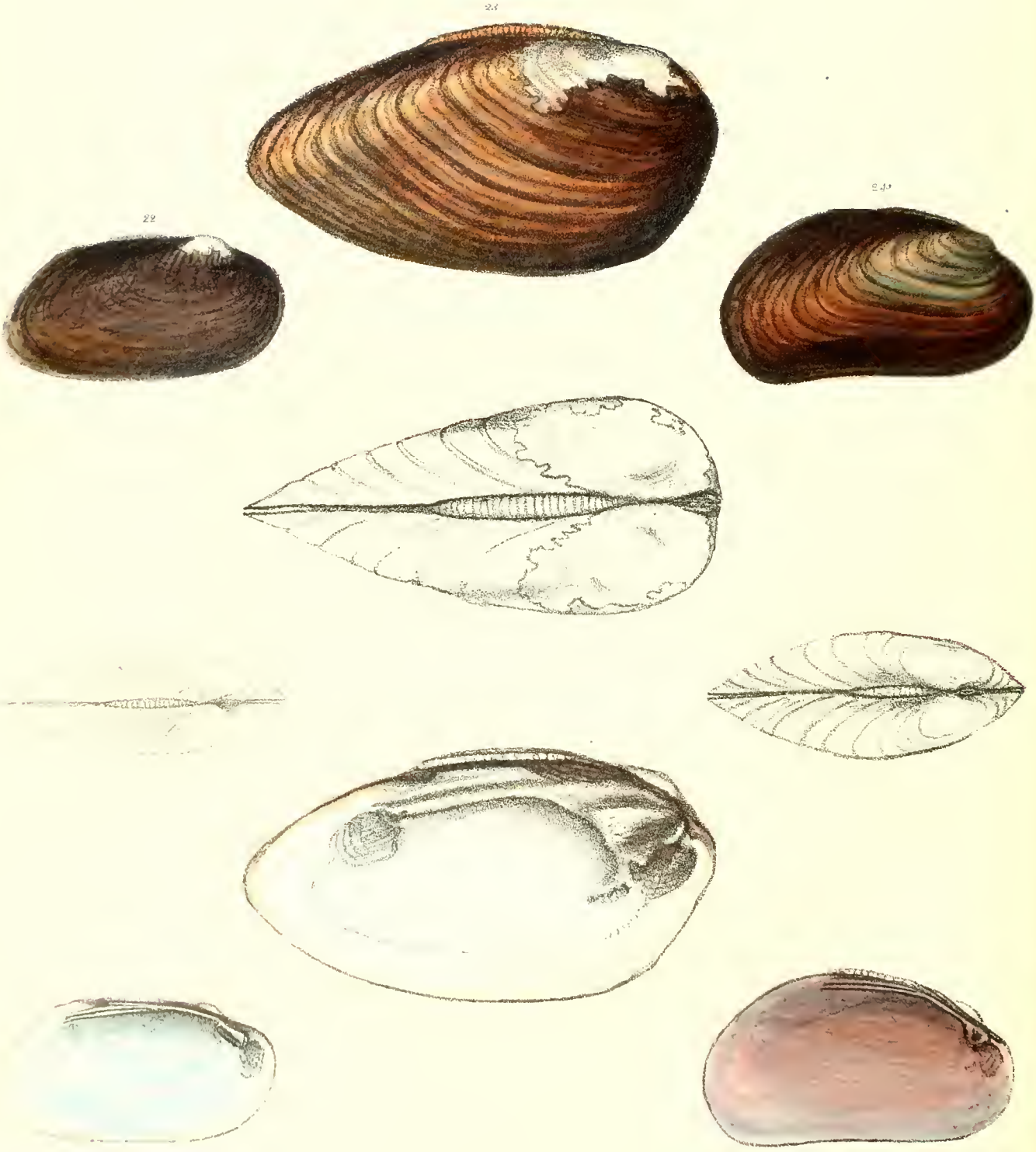


Symphynota bilineata.

Unio varicosus

Unio castaneus

Drawn by T. Drayton


23
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24
Unio decisus
Unio cultriformis
Unio cyprinus

Unio Castaneus. Plate XI. fig. 21.

Testâ subellipticâ, inæquilaterali, obliquâ, inflatâ; valvulis crassis; dentibus cardinalibus magnis; lateralibus subrectis brevibusque; margaritâ maximè fulgente et iridescente.

Shell subelliptical, inequilateral, oblique, inflated; valves thick; cardinal teeth large; lateral teeth nearly straight and short; nacre very pearly and iridescent.

Hab. Alabama river, Judge Tait.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.

Diam. ·6, Length ·8, Breadth 1 inch.

Shell subelliptical, oblique; substance of the shell thick; beaks prominent and situated towards the anterior margin; ligament short; epidermis slightly wrinkled, dark brown anterior to the umbonial slope, and yellowish posterior, where there are a few obsolete rays; cardinal tooth large, slightly elevated, deeply cleft in the left valve and emerging from a pit in the right valve; lateral teeth short and nearly straight; posterior and anterior cicatrices both distinct; dorsal cicatrices situated on the under part of the cardinal tooth within the cavity; cavity of the beaks wide and shallow; nacre very pearly and iridescent.

Remarks.—This small species is allied to the *U. circulus* (Nob.) in colour and to *U. ellipsis* (Nob.) in form. It has the posterior slope yellow, which is so in the *circulus*. The specimen described and figured here is not more than one fourth of the size of an imperfect specimen which accompanied it.

Unio Multistriatus. Plate XII. fig. 22.

Testâ striatâ, transversâ, inæquilaterali; natibus prominulis; umbonibus rugosis; dente cardinali obliquo, laminato, in valvulâ sinistrâ unico, in dextrâ duplici; dente laterali longo et subrecto; margaritâ cæruleo-albâ.

Shell striate, transverse, inequilateral; valves thin; beaks slightly prominent; umbones rugose; cardinal tooth oblique, lamelliform, single in the left valve and double in the right; lateral tooth long and nearly straight; nacre bluish white.

Hab. Brazil, Mrs Mawe.

My Cabinet.

Diam. ·7, Length 1, Breadth 1·9 inches.

Shell subrectangular, transverse, slightly compressed and rounded nearly alike at both ends; substance of the shell rather thin; beaks slightly prominent, surrounded by wrinkles forming acute angles with each other, extending over the umbones and some distance down the umbonial slope; ligament linear; epidermis dark brown and wrinkled; cardinal tooth oblique, lamelliform, *single* in the left valve and *double* in the right; lateral teeth long, lamelliform and nearly straight; anterior and posterior cicatrices both confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide and shallow; nacre bluish white and slightly iridescent in posterior margin.

Remarks.—The specimen from which the above description was made was sent to me by Mrs Mawe of London. This species approaches in outline to some of the varieties of the *U. complanatus* (Solan.). In the flexuous rugosities of the beaks it resembles the *U. corrugatus* (Lam.) and *U. cæruleus* (Nob.). It differs however from them both in outline.

Unio Decisus. Plate XII. fig. 23.

Testâ inæquilaterali, obliquâ, cuneatâ, scalenâ, crassâque; valvulis percrassis; natibus elevatis, incurvatis, fere terminalibus; dentibus cardinalibus aliquantulum parvis, lateralibus crassis; margaritâ albâ.

Shell inequilateral, oblique, wedge shaped, scaleniform and thick; valves very thick; beaks elevated, incurved, nearly terminal; cardinal teeth rather small; lateral teeth thick; nacre pearly white.

Hab. Alabama river, Judge Tait.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of H. C. Carey.
Cabinet of P. H. Nicklin.
Cabinet of the American Philosophical Society.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of the Lyceum of Natural History of New York.

Diam. 1·4, Length 1·7, Breadth 3·2 inches.

Shell wedge-shaped, thick anteriorly and scaleniform; substance of the shell thick anteriorly and thin posteriorly; beaks nearly terminal, prominent and incurved, generally decorticated; ligament rather small; epidermis yellowish brown, sometimes possessing oblique, indistinct, brown rays; cardinal tooth short and slightly elevated, in the left valve double and deeply cleft, in the right valve emerging from a pit; lateral teeth thick and curving over the cardinal teeth; posterior and anterior cicatrices both distinct; the smaller posterior cicatrix situated against the lateral tooth at its termination; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks not deep, rounded; nacre thick and pearly anteriorly, thin and irideseent posteriorly.

Remarks.—This species resembles the *scalenia* of Rafinesque, but more closely approaches the *patulus* (Nob.) and *truncatus** (Swainson). It differs from the *patulus* in the rays being uninterrupted, and in being much thicker. From the *truncatus* it differs greatly in the cardinal tooth and in being wedge shaped and not cylindrical.

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* I will take advantage of this opportunity to correct an error, in stating in a former paper that Lamarck and other European conchologists erroneously made the genus Unio feminine. I should then have mentioned that Mr Swainson was an exception.

Unio Cuprinus. Plate XII. fig. 24.

Testâ ovatâ, transversâ, inæquilaterali, inflatâ, postico latere latissimo; valvulis tenuibus; natibus parvis undulatisque; dentibus cardinalibus exiguis, lateralibus laminatis; ligamento longo; margaritâ cupreâ.

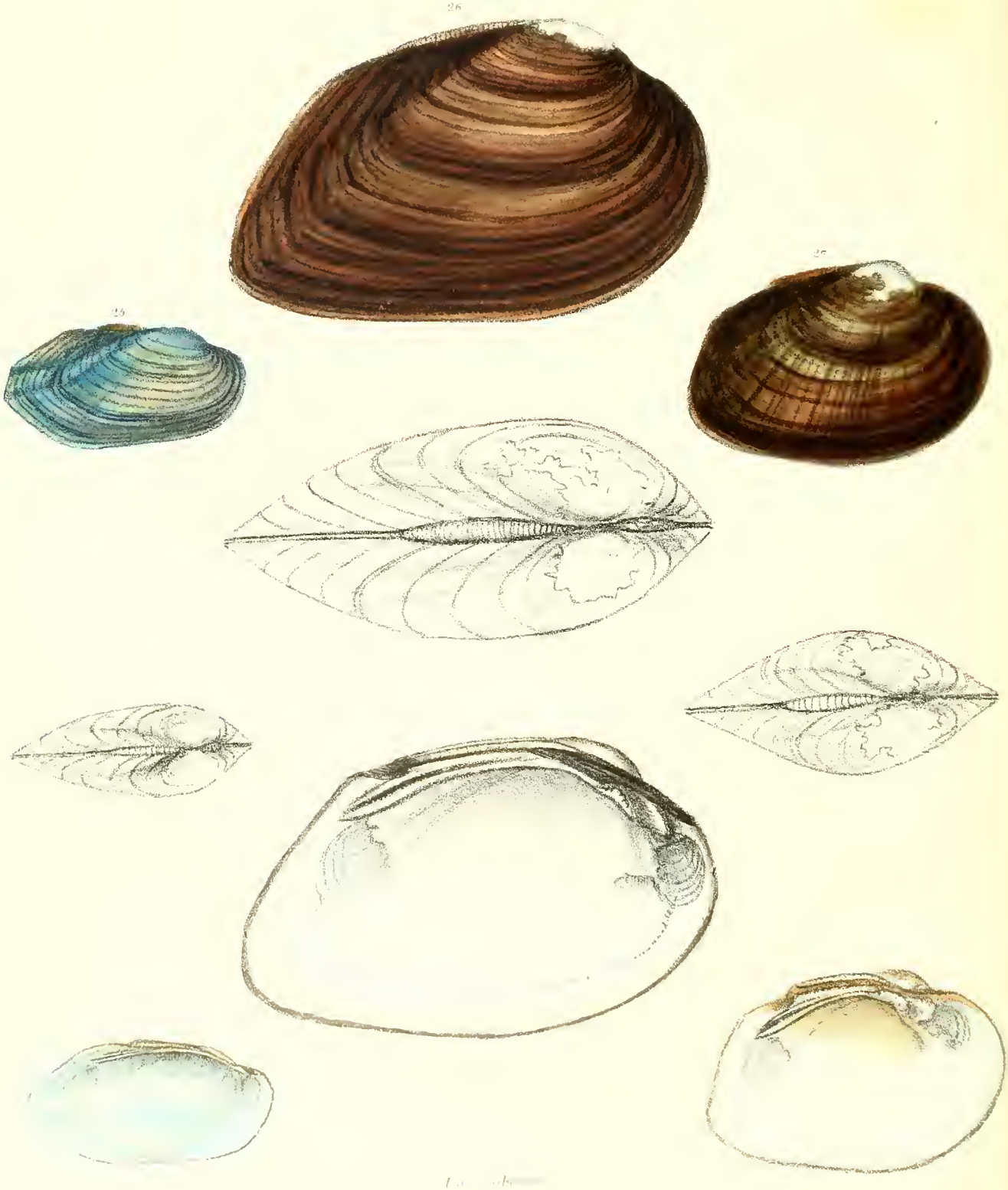
Shell reversely ovate, transverse, inequilateral, inflated; valves thin; beaks small and undulated; cardinal teeth small; lateral teeth thin and lamellar; ligament long; nacre copper colour.

Hab. Mexico, J. R. Poinsett, Esq.
My Cabinet.
Cabinet of the American Philosophical Society.

Diam. ·9, Length 1·1, Breadth 2·1 inches.

Shell reversely ovate, transverse, inflated, disposed to be straight in the basal margin; substance of the shell thin; beaks small, pointed, furnished with concentric undulations and placed near the anterior margin; ligament long, lanceolate; umbonial slope large and rounded; posterior slope elevated into a carina; epidermis reddish brown and wrinkled; rays obsolete; cardinal teeth very small and tuberculated; lateral teeth slender, lamellar and nearly straight; anterior and posterior cicatrices both confluent; dorsal cicatrices in the centre of the cavity of the beaks; cavity of the beaks wide; nacre copper colour and very brilliant towards the posterior margin.

Remarks.—This remarkable shell is one of the many fine specimens of the splendid collection of interesting subjects brought by our fellow member J. R. Poinsett, Esq. from Mexico, and which, by his munificence, now constitutes a valuable part of the collection of this society. In comparing this species with the others of the genus, we shall find it most to resemble the *complanatus* (Solan.). It differs however in having the posterior dorsal margin more elevated, in the peculiar copper colour of the nacre, and in the concentric undulations of the beaks. In the specimens which I have had an opportunity of examining, the anterior cicatrices were found to be confluent, a circumstance rarely met with in the Uniones.



Unio Cæruleus. Plate XIII. fig. 25.

Testâ angusto-elliptică, transversâ, inæquilaterali, subcylindraceâ; valvulis tenuibus; natibus prominulis, rotundatis et undulatis; dentibus cardinalibus lamelliformibus, et in dextrâ valvulâ solâ duplicibus; lateralibus rectis; margaritâ cæruleo-albâ et iridescente.

Shell narrow-elliptical, transverse, inequilateral, subcylindrical; valves thin; beaks rather elevated, rounded and undulated; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight; nacre bluish white, pearly and iridescent.

Hab. River Hoogly, Hindostan, G. W. Blakie.
My Cabinet.
Cabinet of G. W. Blakie.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of H. C. Carey.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Cabinet of Dr Burrough.

Diam. ·6, Length ·8, Breadth 1·6 inches.

Shell narrow-elliptical, transverse, subcylindrical, disposed to be straight on the sides and basal margin; substance of the shell thin; beaks near the anterior margin rounded, somewhat elevated, and corrugated with diverging undulations; ligament rather short and straight; epidermis finely wrinkled and bluish green, particularly on the posterior part; rays very indistinct; posterior slope furnished with small undulations and two irregular rays on each side; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices within the cavity of the beaks; cavity of the beaks wide and rounded; nacre bluish white, very pearly and iridescent.

Remarks.—This species was brought from Calcutta by Mr Blakie, to whose kindness I am indebted for it and many other fine shells.

As far as I have been able to ascertain, it has not been described. From the roughness of the beaks it might perhaps be thought to be only a variety of *corrugata* (Lam.). On comparing the two species, however, they will be found to be entirely distinct; the *corrugata* being "ovato-rhombeâ," while the *cæruleus* is "angusto-ellipticâ." In some specimens the nacre is slightly rose-coloured along the basal margin.

Unio Obesus. Plate XIII. fig. 26.

Testâ rhomboides-ovatâ, obliquâ, inæquilaterali, inflatâ; valvulis subcrassis; natibus prominulis; dentibus cardinalibus elevatis, compressis cristatisque; lateralibus longis et curvatis; margaritâ livido-albâ.

Shell ovate-rhomboidal, oblique, inequilateral, inflated; valves somewhat thick; beaks rather prominent; cardinal teeth elevated, compressed and crested; lateral teeth long and curved; nacre livid white.

Hab. York river, Vir., William Cooper.
My Cabinet.
Cabinet of Lyceum of Natural History of New York.

Diam. 1·5, Length 2, Breadth 3·3 inches.

Shell ovate-rhomboidal, oblique, inflated, angular behind; substance of the shell somewhat thick; beaks rather prominent and placed near the anterior margin; posterior slope wide and furnished with two impressed lines on each side; ligament long and large; epidermis fuscous and much wrinkled; rays obsolete; cardinal teeth oblique, elevated, lamellar, crested, deeply cleft in the left valve; lateral teeth long, curved and enlarged towards the posterior termination; anterior cicatrices distinct; posterior cicatrices disposed to be distinct; dorsal cicatrices form a row across the cavity of the beaks; cavity of the beaks rounded and deep; nacre livid white and iridescent on the posterior margin.

Remarks.—This is one of the specimens so disinterestedly contributed to our Transactions by the Lyceum of Natural History of New

York. Its natural situation seems to be between the *cariosus* (Say), and *complanatus* (Solan.). It has the capaciousness of the former, and somewhat of the outline of the latter.

Unio Incurvus. Plate XIII. fig. 27.

Testâ ovato-rhombeâ, transversâ, inæquilaterali; valvulis antice crassis, postice tenuibus; natibus rugosis, prominentibus incurvisque; dentibus cardinalibus elevatis cristatisque, lateralibus longis et subcurvis; margaritâ albâ et iridescente.

Shell ovate-rhomboidal, transverse, inequilateral; valves thick anteriorly and thin posteriorly; beaks rugose, prominent and incurved; cardinal teeth elevated, and crested; lateral teeth long and slightly curved; nacre pearly white and iridescent.

Hab. ***. From Gibraltar, Mrs Mawe.
My Cabinet.

Diam. 1, Length 1·4, Breadth 2.1 inches.

Shell ovate-rhomboidal, transverse, slightly inflated; substance of the shell thick and white anteriorly, thin and iridescent posteriorly; beaks prominent, large, incurved and rugose, with small concentric undulations: ligament rather short and thick; epidermis yellowish brown; rays oblique and green; cardinal tooth elevated, crested and divided in the left valve, in the right simple and recurved; lateral tooth long, slightly curved and enlarged at posterior termination; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and angulated; nacre white on the anterior, and iridescent on the posterior portion.

Remarks.—This shell, although it possesses no very striking character, cannot be placed with any American or exotic described species with which I am acquainted. It was sent to me by Mrs Mawe with the locality "from Gibraltar" on the label, and I have little doubt but that it came from some neighbouring African river. It certainly does not belong to any described European species. It bears more resem-

blance to the *corrugata*, Var. *a* (Lam.), than to any other species I have seen. It differs, however, in being more transverse, in the beaks being more prominent, and in their rugosities being composed of concentric undulations.

Symphynota Bilineata. Plate XI. fig. 19.

Testâ subellipticâ, transversâ, inæquilaterali, compressâ; valvulis tenuissimis; posteriori margine dorsali elevatâ connatâque; natibus subprominulis, undulas concentricas et duas lineas elevatas ad marginem posteriorem currentes, habentibus; dentibus cardinalibus laminatis et in valvulâ dextrâ solum duplicibus; lateralibus rectis; margaritâ colore salmonis subtinctâ.

Shell subelliptical, transverse, inequilateral, compressed; valves very thin, posterior dorsal margin elevated and connate; beaks very slightly elevated, concentrically undulate and possessing two elevated lines which pass to the posterior margin; cardinal teeth lamelliform and double in the right valve only; lateral teeth straight; nacre slightly salmon coloured.

Hab. River Hoogly, Hindostan, G. W. Blakie.
My Cabinet.
Cabinet of G. W. Blakie.
Cabinet of Dr Burrough.
Cabinet of the Academy of Natural Sciences.

Diam. ·3, Length ·7, Breadth 1·3 inches.

Shell subelliptical, transverse, inequilateral, compressed, diaphanous; substance of the shell extremely thin; beaks very slightly elevated, concentrically undulate, possessing two small elevated lines which pass (posterior to the umbonial slope) to the posterior margin; valves elevated into a carina and connate in the posterior dorsal margin; dorsal margin a right line; ligament very small; epidermis shining, greenish yellow, darker on the posterior slope; cardinal teeth lamelliform and double in the *right* valve only; lateral teeth lamelliform, long and straight; posterior and anterior cicatrices both confluent; dorsal cicatrices obsolete; cavity of the beaks shallow, very wide, and

Symphynota inflata.

Drawn by J. Drayton.

exhibiting the undulations of the beaks; nacre very thin and slightly salmon coloured, darker in the cavity of the beaks.

Remarks.—This very small species was brought from Calcutta by Mr Blakie, with the *U. cæruleus* (Nob.). Both were procured about one hundred miles above that city. It resembles, in its outward characters, the young of *S. cygnea* (*Anod. cygnea*, authors). It is, however, more transverse, and differs altogether in the formation of the hinge, which is furnished with perfect cardinal and lateral teeth. In the peculiar character of the *double tooth* in the *right* valve, it resembles the *S. ochracea.** The *bilineata* is easily distinguished by the two delicate lines which pass from the beaks to the posterior margin.

SYMPHYNOTA INFLATA. Plate XIV. fig. 28.

Testâ ovato-triangulari, inæquilaterali, ventricosâ; valvulis pertenuibus, connato-bialatis; dente cardinali in valvulâ singulâ unico; dentibus lateralibus ad terminos laminatis; natibus prominulis; ligamento celato; margaritâ purpureâ.

Shell triangular-ovate, inequilateral, ventricose; valves very thin, elevated into two wings, both of which are connate; cardinal tooth single in both valves; lateral teeth bladed towards their termination; beaks slightly prominent; ligament concealed; nacre purple.

Hab. Alabama river, Judge Tait.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences.

Diam. 1·6, Length from the beaks to the base, 2·4, Breadth 4·5 inches. Length from the top of the wing to the base, 3·7 inches.

Shell triangular-ovate, ventricose, transversely and finely wrinkled; substance of the shell thin; valves elevated into a broad high wing posterior, and a small one anterior to the beaks, and connate in both; pos-

* See vol. iii. p. 455.

terior wing recurved at top; beaks slightly prominent; ligament concealed in the wing; epidermis brown, with obsolete rays; two or three fuscous lines pass from the beak to the posterior margin above the umbonial slope; cardinal tooth single in both valves, and lamelliform; lateral teeth bladed and elevated towards their termination; the two teeth form one continuous curve line (with the exception of a slight angle where they join) which is abrupt at both ends; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices pass from the cavity towards the anterior cicatrices, and are very perceptible; cavity of the beaks wide and shallow; nacre purple and iridescent.

Remarks.—I am indebted, for this fine shell, to Judge Tait of Alabama, who kindly sent it to me with several other new species of fluviatile and terrestrial shells described in this paper. This species seems to form a natural link between *S. lævissima* (Nob.) and *S. bialata* (Nob.). It resembles the former in colour and in the teeth, but differs in the elevation of the wing, and in being less shining and more ventricose. It resembles the latter in its elevated wing and general outline, but differs from it in nacre, exterior colour, in not being possessed of undulations along the base of the posterior wing, and in the teeth.

MELANIA SUBULARIS. Plate XV. fig. 30.

Testâ elevatâ, turritâ, corneâ; apice acuto; anfractibus instar duodenis, planis: anfractu infimo in medio carinato; aperturâ albâ, quadrante longitudinis testæ.

Shell elevated and acutely turrited, horn colour; apex acute; whirls about twelve, flat, carinate on the middle of the body whirl; base angulated; aperture white and one-fourth the length of the shell.

Hab. Niagara river.

My Cabinet.

Diam. ·4, Length 1·3 inches.

Remarks.—I took this species at the Falls of Niagara, and being un-

29. *Melania elongata*.
30. *M subularis*.
31. *M tuberculata*.
32. *Melania acuta*
Helix carolinensis.
Carocolla helicoïdes.
35. *Carocolla spinosa*.
Valvata areniferi.
Io fusiformis.

able to refer it to any described species, have given it a place here. It resembles the *virginica* (Say), but differs greatly in elevation, the *virginica* having about seven whirls only. The carina causes the whirls to be flatter in the subularis. In some specimens the columella is purple.

MELANIA TUBERCULATA. Plate XV. fig. 31, a, b.

Testâ obtuse turritâ, latâ, tenebroso-fuscâ aut nigrante; apice obtuso; anfractibus quinque; medio anfractûs ultimi tuberculis instructo; labro enormiter curvo; basi angulatâ; aperturâ purpureâ, dimidium longitudinis testæ habente.

Shell obtusely turrited, wide, very dark brown or black; apex obtuse; whirls five; middle of the last whirl furnished with tubercles; outer lip irregularly curved; base angulated; aperture purple and one half the length of the shell.

Hab. Tennessee river, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of Academy of Natural Sciences.
Diam. ·5, Length ·9, of an inch.

Remarks.—This species is somewhat allied to the *M. armigera* (Say), but is smaller and much less ponderous. The tubercles are more numerous and less elevated. In the *tuberculata* the impressed band, which exists in the *armigera* above the armature, is wanting. In colour it differs altogether.

MELANIA ACUTA. Plate XV. fig. 32.

Testâ acute turritâ, tenui, corneâ; apice acuto; anfractibus octo, supra suturam carinatis, in longum undatis, transversim lineatis; basi angulatâ; aperturâ albâ, quadrantem longitudinis testæ habente.

Shell acutely turrited, thin, horn-coloured; apex acute; whirls eight, carinate immediately above the suture, longitudinally undulated and transversely lineated; base angulated; aperture white, and one-fourth the length of the shell.

Hab. Tennessee river, Professor Vanuxem.
My Cabinet.
Cabinet of Prof. Vanuxem.
Diam. five-twentieths, Length thirteen-twentieths of an inch.

Remarks.—I have seen no described species to which this bears a close resemblance. Its delicate form, furnished with undulations and transverse lines, will easily distinguish it.

HELIX CAROLINIENSIS. Plate XV. fig. 33, a, b, c.

Testâ supra depressâ, infra inflatâ, oblique striatâ, fuscâ, imperforatâ; anfractibus quinque; spirâ maximc obtusâ; aperturâ coarctatâ; labro albo, reflexo, latoque, duobus dentibus instructo, quorum inferior longus et laminatus, superior parvus et conicus est; columellâ dentem levatum incurvumque habente; columellæ basi valde impressâ.

Shell depressed above, inflated below, obliquely striated, fuscous, imperforate; whirls five; spire very obtuse; aperture contracted; outer lip white, broad and reflected, furnished with two teeth, the inferior one long and lamellar, the superior one small and conical; columella with an elevated incurved tooth; base of the columella much impressed.

Hab. South Carolina near Cheraw.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Diam. fourteen-twentieths, Length seven-twentieths of an inch.

Remarks.—I found a few specimens of this fine *Helix* while travelling through South Carolina three years since. They were taken from beneath the bark of an old tree. It is closely allied to Mr Say's *pal-*

liata, but differs in the region of the base of the columella being more deeply impressed. The oblique striæ are more distinct, and no specimen which I obtained is in the least hirsute.

CAROCOLLA HELICOIDES. Plate XV. fig. 34, a, b, c.

Testâ orbiculatâ, fuseâ, supra plano convexâ, subtus inflatâ, imperforatâ, oblique striatâ; anfractibus quinque; spirâ obtusissimâ; aperturâ contractâ; labro albo, lato et reflexo, dentibus duobus instructo, quorum inferior longus et laminatus, superior parvus et conicus est; columellâ dentem unicum, longum, elevatum et incurvum habente.

Shell orbicular, fuscous, plano-convex above, inflated below, imperforate, obliquely striated; whirls five; spire very obtuse; aperture contracted; outer lip white, broad, and reflected, furnished with two teeth, the inferior one long and lamellar, the superior one small and conical; columella with a long, elevated, incurved tooth.

Hab. Tennessee, near Nashville, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.

Helix palliata? Say, Var. *a*, Academy of Natural Sciences, Vol. II, p. 152.

Diam. eighteen-twentieths, Length nine-twentieths of an inch.

Remarks.—Among the fine shells brought by Professor Vanuxem some years since from a tour through the Western states were two specimens of this beautiful Carocolla. In its specific characters it resembles the *Helix palliata* of Say, and *Helix caroliniensis* described in this paper. It is destitute of the hirsute appearance of the *palliata*, and is entirely distinct in the flatness of the whirls of the spire. In the *caroliniensis* the base of the columella is more impressed and the whirls more inflated.

Carocolla Spinosa. Plate XV. fig. 35, a, b, c.

Testâ lenticulari, tenui, pellucidâ, imperforatâ; carinâ acutâ et spinis minutis munitâ: anfractibus sex; spira fere plana; apertura angustissima; columella dentem unicum longum et laminatum habente; labro enormiter crasso et prope finem superiorem angulato.

Shell lenticular, thin, diaphanous, imperforate; carina acute and armed with minute spines; whirls six; spire nearly planular; aperture linear, being guarded by a long tooth on the columella; outer lip irregularly thick, angulated near the superior termination.

Hab. Alabama near Clairborne, Judge Tait.
My Cabinet.
Cabinet of the Academy of Natural Sciences.
Diam. eleven-twentieths, Length four-twentieths of an inch.

Remarks.—For this beautiful and highly interesting species I am indebted to the kindness of Judge Tait. Its peculiar delicate spines distinguished it from all described species. These, however, when the specimens are not perfect, are entirely obliterated. In the construction of the aperture it is unlike every *Carocolla* I have seen, bearing much resemblance in this region to the *Helix hirsuta* (Say).

Valvata Arenifera. Plate XV. fig. 36, a, b.

Testâ orbiculatâ, convexâ; anfractibus tribus, qui arenis agglutinatis operiuntur; umbilico lato; spirâ obtusâ.

Shell orbicular, convex; whirls three, covered by the agglutinations of sand; umbilicus wide; spire obtuse.

Hab. Cumberland river near Nashville, W. Cooper.
My Cabinet.
Cabinet of W. Cooper.

Cabinet of the Lyceum of Natural History of New York.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Diam. five-twentieths, Length four-twentieths of an inch.

Remarks.—This very curious and interesting species was among the fresh water shells so disinterestedly sent to me by the Lyceum of Natural History of New York to be examined and inserted in this paper. It has the singular property of strengthening its whirls by the agglutination of particles of sand, &c. by which it is entirely covered, and in this character it resembles the *Trochus agglutinans*, Lam. (*Trochus conchyliophorus*, Authors.) The apex in all the specimens which I have had an opportunity of examining is broken. The operculum was observed in two specimens sufficiently perfect to exhibit a striated horny structure.

SUPPLEMENT.

Read before the American Philosophical Society, May 20th, 1831.

SINCE my Memoir, read before the Society last May, went to press, I have procured several species which I believe to be undescribed; and which I now propose to add as a supplement, with some preliminary observations.

Having had an opportunity to examine many fine specimens within a few months, particularly those brought to this city by James Ronaldson, Esq. to whose kindness I am indebted for some very rare species, I have had an opportunity of observing some colouring of the nacre which is exceedingly beautiful and rare. It is a singular fact, that several species, which may be considered, emphatically, as white in the nacre, vary slightly by being possessed, very rarely, of a tint of pink in the lateral and sometimes in the cardinal tooth or in the centre of

the valve. In the cabinets of W. Cooper, Esq. and Mr R., as well as my own, are specimens of *U. cylindricus* whose pearly teeth are beautifully tinged with the most delicate and beautiful pink. The same cabinets possess also the *U. securis* with the lateral tooth tinted in the same manner. The *U. metanever* has sometimes, though very rarely, a tint of pink, and still more rarely of nankeen yellow in the centre of the beaks. The *U. circulus*, as observed in a previous memoir, is sometimes, though rarely, possessed of a pink tint.

Whether all the species with white nacre may sometimes be possessed of this beautiful variety remains to be observed. These rare and beautiful variations will undoubtedly, when our cabinets shall be possessed of all the rare species, constitute the jewels of our collections and be exceedingly sought after.

The size to which some of the species of the *Naiades* grow is exceedingly great. I have in my cabinet the following species, of the weight and size annexed:

	Inches.	*Inches.*	*lb. oz.*
U. plicatus,	length 4·6,	breadth 6·8,	weight 1 10.
U. multiplicatus	4·9,	6·2,	1 7.
Symphynota alata*	4·2,	7·1,	0 11.
Symphynota complanata†	5·1,	7·2,	0 15.

Nearly all the specimens which I have seen of the *U. soleniformis* (nobis) were sent from Louisville. It struck me as somewhat singular, that a species so fragile should exist about the falls of a large river, the force of whose waters there is well known. In explanation of this, I have been informed by Mr T. W. Taylor of that city, that they are found to congregate under large flat stones. Unacquainted with this fact he searched in vain for a long time without finding a single alive specimen, while odd valves were not uncommon. They were first discovered in this situation by raising a stone to take a common crawfish, which had taken refuge there. This character seems to be peculiar to this species.

My sister, Mrs Febiger of Cincinnati, mentioned to me a pe-

* Unio alatus, Say.

† Alasmodonta complanata, Barnes.

culiarity in the habits of the *Unio oriens*. This shell is possessed of so small a portion of nacre, that in some specimens the epidermis may be said to be as thick as the nacre itself. It is obvious therefore that the rolling of stones and sand carried by the rapidity of the current of the Ohio upon them, would destroy them if they took the same position with other species embedded merely in the surface of the sand. This they avoid, and, burying themselves from six to twelve inches in the sand, can only be discovered by a small round hole at the surface through which they receive their supply of water.

In the description of *U. varicosus**, I ought to have mentioned that I did not hesitate to make use of that name, although already used by Lamarck, having no doubt but that his species was the *Alasmodonta undulata*† (Say).

When making some observations on the family *Naiades*, Vol. III. p. 442, I mentioned in a note upon the genus *Castalia*, that it must be considered as a species of the genus *Unio*. Having recently procured from Paris a perfect specimen of it, I have given it a close examination, and do not now feel by any means certain that it ought not, *in the present received division of the family*, to be considered a distinct genus. The crenulations of the cardinal and lateral teeth in this specimen are very distinct, which was not the case in the single valve which I formerly examined. In this character it has a slight approach to the family *Arcacea;* and Lamarck very justly says, "comme elle semble fluviatile‡, elle indique que les trigonées forment une transition des arcacées aux nayades."

Lamarck, in his description of the *Castalia*, makes no mention of the position or existence of the muscular impressions of this genus. In examining this character, I have discovered that the same observations made at page 67, in relation to the cicatrix of the extensor muscles of the *Hyria avicularis*, will equally well apply to the genus *Castalia*, and it is very remarkable that it should be so differently situated from the same cicatrix in the genus *Unio*.

* See Vol. IV. p. 90.

† See Vol. III. page 424.

‡ There cannot be a doubt of its being fluviatile.

In ascribing the locality of York river, Virginia, to the *U. obesus.* I have reason to believe there is an error. It was so labelled in the collection of the Lyceum of Natural History of New York; but this, Major Le Conte assures me, must have been done by some transfer or accidental change of the labels; as he procured them in Georgia, from whence he recently obtained a new supply of undoubtedly the same species, and those marked as from York river cannot be traced to that locality. The locality was a matter of surprize to me when I received them as coming from that river.

Unio Olivarius. Plate XVI. fig. 38.

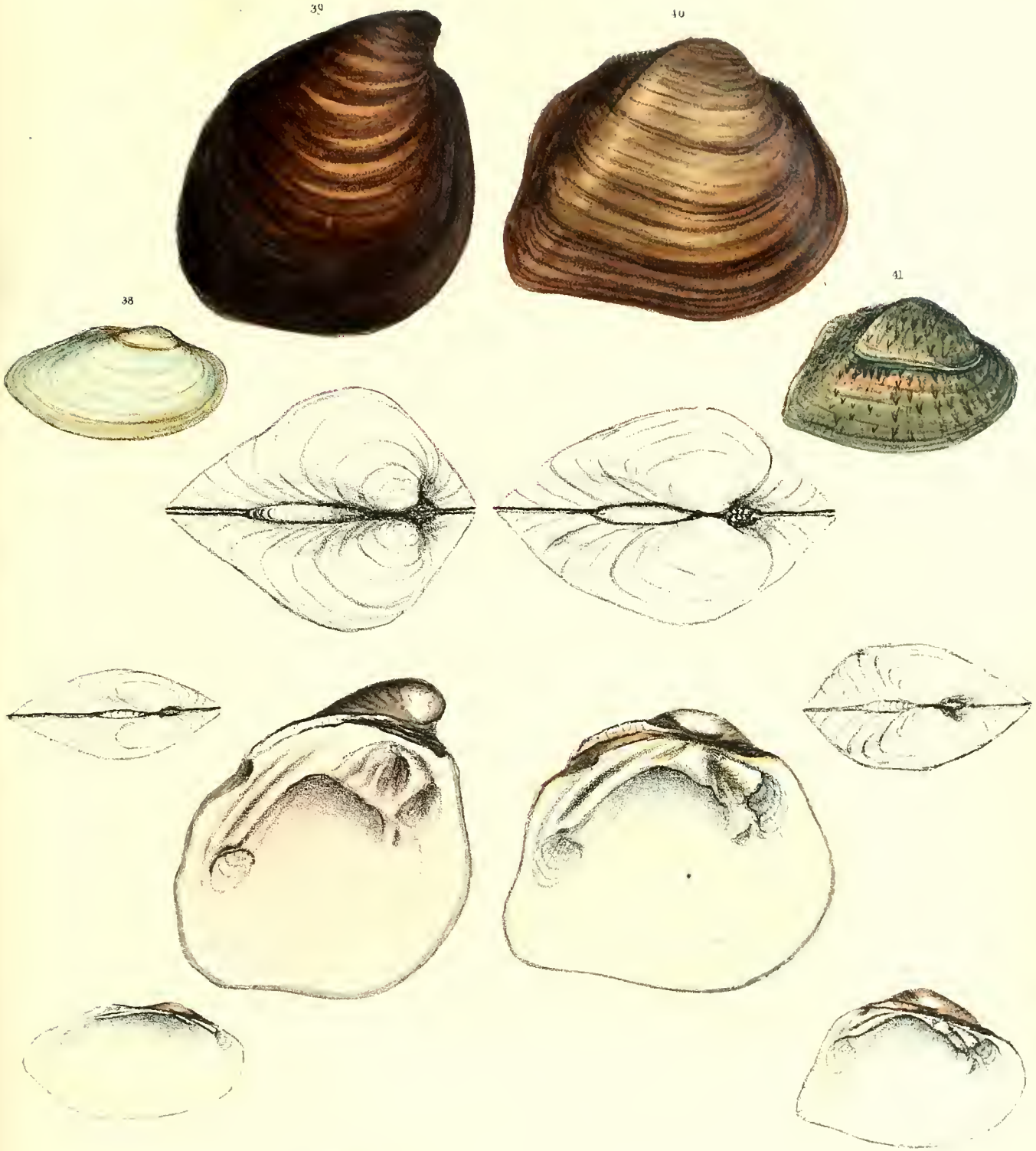
Testâ ovatâ, transversâ, inflatâ, pellucidâ; valvulis pertenuibus; natibus prominulis; epidermide pertenui, lævi et olivæ colorem habente; dentibus cardinalibus magnis laminalis erectisque, lateralibus laminatis brevibusque; margaritâ pertenui albâque.

Shell ovate, transverse, inflated, pellucid; valves very thin; beaks slightly elevated; epidermis olive, very thin and smooth. Cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform; naere very thin, white and pearly.

Hab. Burrill river, India, Dr Burrough.
My Cabinet.
Cabinet of Dr Burrough.
Cabinet of the Academy of Natural Sciences.
Cabinet of Dr Morton.

Diam. ·7, Length ·8, Breadth 1·5 inches.

Shell ovate, transverse, inequilateral, inflated, pellucid: substance of the shell very thin; beaks slightly elevated, rounded and devoid of undulations: ligament very small: epidermis olive, very thin and smooth: rays obscure, cardinal teeth large, erect and lamelliform; lateral teeth short and lamelliform: anterior cicatrices slightly confluent: posterior cicatrices confluent: dorsal cicatrices not perceptible; cavity of the beaks wide; nacre very thin and bluish white.



Unio pyramidatus

Unio trigonus.

Unio Olivarius

Unio formosus.

Drawn by J. Drayton.

Remarks.—This interesting little shell is from the fine collection made by Dr Burrough during his travels in India, and I am indebted to his kindness for the specimen figured. It is a perfectly distinct species, and may easily be recognised by its form, its pellucidness, and its smooth olive-coloured epidermis. It somewhat resembles a young *Anodonta* on the exterior, but the elevated lamelliform teeth easily distinguish it from that genus. Its resemblance to a Spanish olive is very striking.

Unio Pyramidatus. Plate XVI. fig. 39.

Testâ sub-pyramidatâ, longitudinali, inflatâ; valvulis antice crassioribus; natibus maxime prominentibus, recurvis; dentibus cardinalibus magnis crenatisque; lateralibus longis, a cardinalibus separatis, ad baseos marginem vergentibusque; margaritâ colorem carnis habente.

Shell sub-pyramidal, longitudinal, inflated; valves thick anteriorly, thinner posteriorly; beaks very much elevated, recurved; cardinal teeth large and crenate; lateral teeth long, distinct from the cardinal teeth and pointing towards basal margin; nacre flesh colour.

Hab. Ohio, T. G. Lea.

My Cabinet.

Cabinet of the Academy of Natural Sciences of Philadelphia.

Cabinet of P. H. Nicklin.

Unio undatus? Barnes, Var. *a.*

Diam. 1·7, Length 2·3, Breadth 2·1 inches.

Shell sub-pyramidal, longitudinal, inequilateral, anterior part swollen recurvely from the beaks to the basal margin, compressed at posterior margin, slightly depressed anterior to umbonial slope; substance of the shell very thick in the region of the teeth and beaks, thin at posterior margin; beaks very much elevated, recurved and incurved; epidermis very dark brown and finely wrinkled; cardinal teeth large, crenate and deeply impressed in the left valve, single and emerging from a pit in the right; lateral teeth long, slightly curved, distinct

from the cardinal teeth and pointing towards the basal margin; anterior cicatrices distinct, the great one forming a deep pit; posterior cicatrices distinct, the smaller one being placed at the end of the lateral tooth; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angulated; nacre beautifully flesh coloured, very rarely white.

Remarks.—This very beautiful and interesting shell has heretofore been considered as the *U. mytiloides* (Rafin.). It does not however answer either to the description or figure of that author. It may be easily distinguished from any described species of this genus by its exceedingly elevated beaks, and beautiful nacre. In young individuals. indistinct rays may be observed on the beaks.

Unio Trigonus. Plate XVI. fig. 40.

Testâ subtriangulari, inflatâ, præclivo umboniali (quod carinatum est), depressâ: valvulis crassis, natibus prominentibus, incurvis; dentibus cardinalibus magnis, lateralibus magnis et subcurvis; margaritâ albâ et iridescente.

Shell subtriangular, inflated, depressed before the umbonial slope which is carinate; valves thick; beaks prominent, incurved; cardinal teeth large; lateral teeth large and slightly curved; nacre pearly white and iridescent.

Hab. { Ohio river at Cincinnati, T. G. Lea.
Ohio river at Louisville, T. H. Taylor.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of J. Ronaldson.
Cabinet of the Academy of Natural Sciences.

Diam. 1·5, Length 2, Breadth 2·3 inches.

Shell subtriangular, inflated, nearly equilateral, depressed before the umbonial slope, angular behind; umbonial slope carinate; basal margin emarginate; substance of the shell thick, beaks prominent, in-

curved, and slightly undulated at the tips; ligament short and thick; epidermis brown; rays obsolete; cardinal tooth large, elevated and widely cleft in the left valve and emerging from a pit in the right valve; lateral teeth thick and curved in a direction over the cardinal tooth; anterior and posterior cicatrices both distinct: dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and angular; nacre pearly white and iridescent.

Remarks. This is rather a rare shell, and being of a group of the species which are known under the general name of *Mytiloides* (Rafin.), it has been considered merely a variety of that species. Having recently examined this group with very close attention and with the advantage of very many specimens, I am induced to believe that it may with great propriety be divided into four species, viz. *mytiloides* (Rafin.), *undatus* (Barnes), *pyramidatus* (Nobis), and *trigonus*.

Unio Formosus. Plate XVI. fig. 41.

Testâ triangulari, ventricosâ, transversâ; clivo posteriori subplano; radiis irregularibus, interruptis, subacutis; dentibus cardinalibus magnis, lateralibus brevibus subrectisque; margaritâ albâ.

Shell triangular, ventricose, transverse, nearly flat on the posterior slope; rays irregular, interrupted, and somewhat pointed; cardinal teeth large; lateral teeth short and nearly straight; nacre pearly white.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the American Philosophical Society.
Cabinet of the Academy of Natural Sciences.
Cabinet of Peale's Museum.

Diam. 1, Length 1·1, Breadth 1·6 inches.

Shell triangular, ventricose, transverse, inequilateral; posterior slope wide, nearly forming a plane, and possessing numerous indistinct ribs; substance of the shell somewhat thick; beaks somewhat prominent and flattened; ligament short; epidermis yellowish, smooth and shining; rays numerous, irregular, interrupted and pointed somewhat like an arrow head, on the posterior slope they are very minute; umbonial slope carinate; cardinal teeth large and double in both valves; lateral teeth short, nearly straight and enlarged at posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks deep and rounded; nacre pearly white.

Remarks.—This beautiful shell has heretofore been considered as a variety of *U. triangularis* (Barnes). It has, however, I think, characters sufficiently distinctive to entitle it to rank among the species. It differs from that species essentially in being less flat on the posterior slope, in the umbonial slope being carinate and not rounded, in being less transverse and in possessing a sharper edge along the basal margin. In the *triangularis* the greatest transverse diameter is nearer the basal margin than in this species. It is sometimes found much larger than the specimen here represented, which is selected on account of its perfection. My largest specimen would weigh at least four times as much as this one.

Unio Perplexus. Plate XVII. fig. 42.

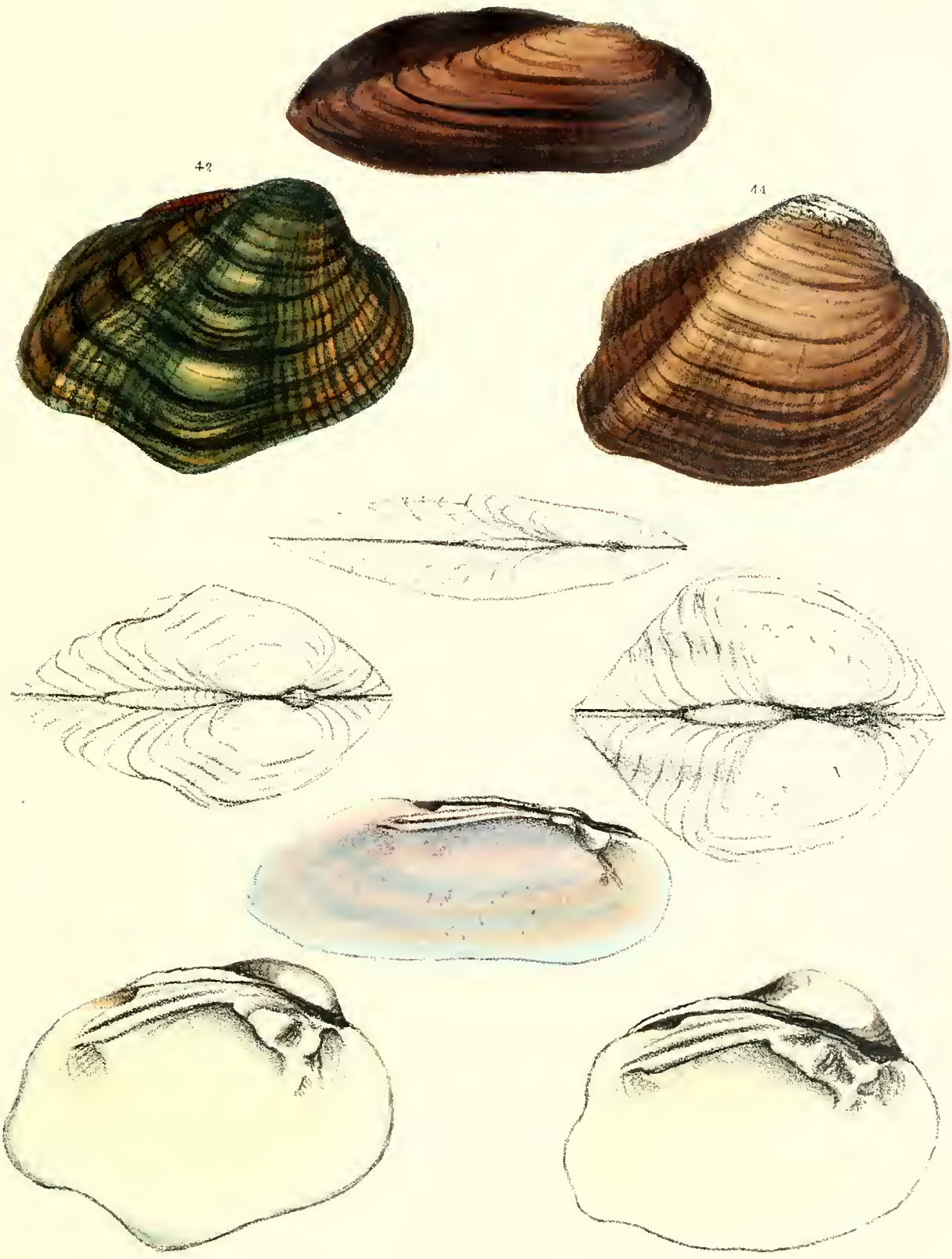
Testâ ovatâ, obliquâ, nodulorum seriem irregularem (fere mediis in valvulis) à natibus ad marginem baseos currentem habente; valvulis crassis; clivo umboniali irregulariter rugato; radiis exiguis et numerosis; dentibus cardinalibus modicis, lateralibus longis subrectisque; margaritâ lacteo-albâ.

Shell ovate, oblique, having an irregular nodulous line near the middle from the beaks to the basal margin; valves thick; umbonial slope irregularly wrinkled; rays small and numerous; cardinal teeth rather small; lateral teeth long and nearly straight; nacre milk white.

43

42

41



Unio perplexus.

Unio angustatus

Unio arcæformis

Drawn by J. Drayton

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of P. H. Nicklin.
Cabinet of the Academy of Natural Sciences.
Cabinet of the American Philosophical Society.

Diam. 1·5, Length 1·9, Breadth 2·6 inches.

Shell ovate, oblique, inequilateral, having an irregular nodulous line near the middle passing obliquely from the beaks to the basal margin; substance of the shell thick; umbonial slope irregularly wrinkled; anterior to the umbonial slope is a wide slightly impressed furrow; beaks prominent, rounded, and situated near the anterior margin; ligament slender and somewhat long; epidermis smooth, shining, yellowish, with numerous small green rays which thickly cover the whole disk except a small portion of the anterior part; cardinal teeth rather small, deeply cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth long, nearly straight, and slightly enlarged near the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and rounded: nacre milk white, rarely rose coloured.

Remarks.—This extraordinary and highly interesting shell formed one of the three divisions into which I had, in my cabinet, separated the *U. cornutus* (Barnes). The other division has been called by Dr Hildreth *foliatus*. Having, since the publication of my last memoir*, received numerous young and perfect specimens, I have concluded that the study of this group would be facilitated by its separation into three species, which will stand thus; *U. cornutus* (Barnes), possessing three or four distinct horns between the beaks and basal margin; *U. foliatus* (Hildreth), having no elevation, but possessed of two elongations, one at the basal margin, the other at posterior margin; and *U. perplexus* (Nob.), possessed of an irregular oblique nodulous ridge

* See note, Vol. III. p. 418.

passing from the beaks to basal margin. The figure represents a perfect and beautiful specimen. It sometimes occurs, however, with an extended posterior portion so large as to be nearly as wide again as the natural width of the shell. The pallial impression, nevertheless, does not advance beyond its natural position, and the space beyond is covered by a prolonged and hard portion of the fringe of the mantle. The irregularity of the nodules is very remarkable and varies from one on each valve to twelve. Where there are few, they are generally much elevated, and there being a correspondent depression in the other valve the specimen presents a remarkable, and distorted appearance. Specimens are occasionally found of a beautiful rose colour. These, however, are very rare.

Unio Angustatus. Plate XVII. fig. 43.

Testa transversâ, sub-compressâ, angusto-ellipticâ; valvulis tenuibus; natibus prominulis et apicibus undulatis; radiis obsoletis; dentibus cardinalibus elevatis et compressis, lateralibus longis, subrectisque; margaritâ purpureâ et iridescente.

Shell transverse, somewhat compressed, narrow-elliptical, valves thin; beaks slightly elevated and undulated at the tips; very obsolete; cardinal teeth elevated and compressed; lateral teeth long and nearly straight: nacre purple and iridescent.

Hab. { Congaree river, South Carolina.
Cooper river, South Carolina, Professor Ravenel.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of Professor Ravenel.
Cabinet of Major Le Conte.
Cabinet of the Academy of Natural Sciences.

Diam. 7. Length 1·1, Breadth 2·8 inches.

Shell very transverse, somewhat compressed, very narrow-elliptical, inequilateral; substance of the shell thin; beaks slightly elevated and

undulated at the tips; ligament long and slender; epidermis reddish brown, rays obsolete; cardinal teeth elevated, compressed and crenulate; lateral teeth long, nearly straight and enlarged at the posterior end; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated in the angle of the cavity of the beaks; cavity of the beaks wide and shallow; nacre dull purple.

Remarks.—This species resembles somewhat the *Unio complanatus* (Soland.). It will, however, at once be distinguished by its great proportionate breadth. In this it resembles the *U. nasutus* (Say), but may be readily separated from that species by its want of the peculiar rays of the *nasutus* and the absence of its posterior enlargement. In the summer of 1827, I found several young and striking specimens of this species in the Congaree at Columbia, S. C. and I am recently indebted to Professor Ravenel for several adult specimens, one of which is represented in the plate. In some specimens the umbonial slope is more elevated and the basal margin straight.

I have a single specimen nearly white in the nacre; and they will, most probably, be found of a salmon colour, as well also of all the tints between these colours, similar to the *U. complanatus* with which and some other it seems to form a natural group*.

* Extract from a letter recently received from Professor Ravenel. "I have been fortunate enough to obtain very good series of the two shells which I was anxious to submit to your examination, as well as a complete series of the *complanatus* in all the varieties in which it occurs in Cooper river and its tributary streams. This will enable you to compare the *lengthened* shell [the above described species] which I thought distinct, with such specimens of the *complanatus* as approach it, and to determine the point. Our shell resembles the *nasutus* closely, particularly the young shell, but is certainly distinct from it. I have never seen the *nasutus* in this state or in North Carolina."

Charleston, South Carolina, May 27th, 1831.

Unio Arcæformis. Plate XVII. fig. 44.

Testâ arcæformi, valde ventricosâ, transversâ; clivo posteriori latissimo et sulcum curvum habente; valvulis præcrassis; radiis capillaribus; dentibus cardinalibus crassis, lateralibus brevibus rectisque; margaritâ albâ.

Shell arcæform, very ventricose, transverse; posterior slope very wide and possessed of a curved furrow; valves very thick; rays hair-like; cardinal teeth thick; lateral teeth short and straight; nacre white.

Hab. Tennessee river, Professor Vanuxem.
My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of W. Cooper.

Diam. 2, Length 2, Breadth 2·5 inches.

Shell subtriangular, very ventricose, transverse, inequilateral; posterior slope very wide, and nearly flat except at the termination of the ligament, possessed of a curved furrow enlarging from the beaks to the posterior margin; substance of the shell very thick; beaks prominent and incurved; ligament short and thick; epidermis yellowish brown; rays hair-like and numerous; cardinal teeth thick and irregular; lateral teeth short, straight and crenate; posterior cicatrices confluent; anterior cicatrices distinct; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks shallow and rounded; nacre white.

Remarks.—I have been in possession of a single specimen of this species for some years. It was brought by Professor Vanuxem from the Tennessee river, and, being old, some of its characters have nearly disappeared. I frequently examined it with great interest, and felt persuaded it was a new species, although it strongly resembled the *triangularis* (Barnes). A young and an adult specimen, recently sent me from New York by that excellent naturalist W. Cooper, proves it beyond a doubt to be a distinct species. In its rays it differs altogether from the *triangularis;* it is dissimilar also in the thickness of the valves and

45

46

47

Unio subovatus.

Unio subrotundus.

Unio pulens.

Drawn by T. Drayton

in the possession of two remarkable curved furrows on the umbonial slope. The specimen represented in the engraving is chosen on account of its being adult, although the beaks are not in a perfect state of preservation. The enlargement and dentate appearance of the posterior margin is very remarkable in this and some other of the species. It occurs more frequently in the *sulcatus* (Nobis), and has been particularly noticed in the remarks on that species*. This variety of *sulcatus* has been considered by Mr Say as a distinct species, to which he has given the name of *ridibundus*. I have never thought that it could be considered to differ specifically from the *sulcatus*.

Unio Subrotundus. Plate XVIII. fig. 45.

Testâ suborbiculatâ, subventricosâ; valvulis crassis; natibus prominentibus; epidermide circa nates luteâ, juxta marginem fuscâ; radiis interruptis; dentibus cardinalibus crassis, lateralibus subcurvis brevibusque; margaritâ albâ et iridescente.

Shell suborbicular, subventricose; valves thick; beaks elevated; epidermis yellow about the beaks, brown towards the margin; rays interrupted; cardinal teeth thick; lateral teeth short and slightly curved; nacre pearly white and iridescent.

Hab. Ohio, T. G. Lea.

My Cabinet.

Diam. 1·1, Length 1·6, Breadth 1·6 inches.

Shell suborbicular, nearly equilateral, subventricose; substance of the shell thick, somewhat thinner behind; beaks thick and elevated; ligament rather short and thick; epidermis yellow and smooth in the region of the beaks; brown and finely wrinkled towards the margin; interrupted rays pass from the beaks and are very visible over the umbones, but are lost in the wrinkles before they reach the margin; cardinal teeth thick and crenate; lateral teeth short, thick and very slightly curved; posterior and anterior cicatrices both distinct; dorsal

* See Vol. III. p. 431.

cicatrices situated on the under side of the cardinal teeth; cavity of the beaks deep and angulated: nacre pearly white and iridescent.

Remarks.—Among the numerous shells I have received within the last five years from our western waters, I have obtained but three or four of this interesting species. Its extreme rarity at first induced me to doubt of the propriety of considering it a distinct species. It is however, perfectly distinct from any described species and seems peculiar in its yellow beaks and brown margin; as well as in the beautiful interrupted rays which pass over the umbones, leaving the anterior and posterior slopes usually of a yellow colour. In form it approaches the *ebenus* (Nobis), in colour it more nearly resembles the *undatus* (Barnes). A young individual of not more than three growths presents such a shining and yellow epidermis as to resemble very much a small *Venus*.

Unio Subovatus. Plate XVIII. fig. 46.

Testâ subovatâ, transversâ, inflatâ; valvulis crassis; natibus prominentibus et apicibus undulatis; multis radiis viridibus; dentibus cardinalibus erectis et in valvulâ utrâque duplicibus, lateralibus laminatis brevibusque; margaritâ albâ.

Shell subovate, transverse, inflated; valves thick; beaks elevated and undulated at the tip; rays green and numerous; cardinal teeth double in both valves and erect; lateral teeth short and lamelliform; nacre white and very pearly.

Hab. Ohio river, T. G. Lea.
My Cabinet.
Cabinet of John Ronaldson.
Cabinet of the Academy of Natural Sciences.

Diam. 2·2, Length 3, Breadth 4·2 inches.

Shell subovate, transverse, inequilateral, inflated; substance of the shell thick; beaks elevated, incurved and undulated at the tips; ligament short and thick; epidermis yellowish with numerous green rays

passing obliquely from the beaks to the margin; cardinal teeth large, double in both valves, very erect and deeply cleft in both valves; lateral teeth short and lamelliform; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated within the cavity of the shell on the under part of the cardinal tooth and on the plate between the cardinal and lateral teeth; cavity of the beaks very large and rounded; nacre white and very pearly.

Remarks.—This species is very closely allied to the *U. ovatus* (Say) and *U. occidens* (Nobis). It differs constantly, however, from both, in being more produced posteriorly, and in the position of the beaks which are placed nearer the anterior margin. It is less flattened on the posterior slope than the *ovatus*, and less carinate than the *occidens*. Like both these species the anterior section of the cardinal teeth is the most elevated. In some specimens no rays are observable*.

Unio Pileus. Plate XVIII. fig. 47.

Testâ subtriangulari, ventricosâ, præclivo umboniali in longum subsulcatâ, emarginatâ; valvulis crassis; radiis capillaribus; dentibus cardinalibus magnis, lateralibus breviusculis subcurvisque; margaritâ albâ et iridescente.

Shell subtriangular, ventricose, slightly emarginate, longitudinally furrowed in

* Since this supplement went to press I have seen in the fine collection of that excellent conchologist, Mr W. Hyde, a specimen sent him by Mr Barnes some years since as *U. ventricosus*. If this specimen be not of the same species as the above described, it certainly very closely resembles it. Never having seen the individual specimen described by Mr Barnes as *ventricosus*, I believed, from that part of the description in which he says "this shell is more capacious than any other of the genus hitherto described," that he meant the species known to us as *globosus*, and therefore I selected of the two species that which seemed to agree the least with his description, and figured and described it. Should it, upon further examination, prove that I have described the same shell with Mr Barnes, the name of *globosus* should be used to distinguish this capacious species, specimens of which are in the cabinets of Mr Hyde, the Academy of Natural Sciences, Peale's Museum, and in my own. Mr Barnes must, I think, be in error in supposing the *ventricosus* to inhabit the Delaware, or New Jersey near New York. I do not think that any of the group belong to our eastern waters.

front of the umbonial slope; valves thick; rays hair-like; cardinal teeth large; lateral teeth rather short and slightly curved; nacre pearly white and iridescent.

Hab. Ohio river, near Cincinnati, Mrs Febiger.
My Cabinet.

Diam. 1·2, Length 1·8, Breadth 1·8 inches.

Shell subtriangular, angular behind and rounded before, ventricose: longitudinally furrowed in front of the umbonial slope, the furrow causing a slight emargination in the basal margin; umbonial slope flattened on the ridge; substance of the shell thick; beaks prominent and rounded at the tip; ligament short and thick; epidermis yellowish-brown and wrinkled; rays numerous and hair-like; cardinal tooth large, elevated and deeply cleft in the left valve, single and emerging from a pit in the right valve; lateral teeth short and slightly curved; anterior cicatrices distinct; posterior cicatrices confluent; dorsal cicatrices situated on the under part of the cardinal tooth; cavity of the beaks wide and rounded; nacre pearly white and iridescent.

Remarks.—This shell has recently come into my possession and was taken near Cincinnati. It is different from any species I have seen, and somewhat resembles the *U. sulcatus* (Nobis), having a furrow from the beaks to the margin anterior to the umbonial slope. It differs from it, however, in being more elongated and in being destitute of a purple nacre. The disposition to flatness in the umbonial slope is remarkable in this species.

MELANIA ELONGATA. Plate XV. fig. 29.

Testâ elevatâ et acute turritâ, fusco-corneâ, purpureo-fasciatâ; anfractibus circiter decem parum depressis; basi angulatâ; aperturâ cœruleo-albâ, longitudinis testæ quadrantem habente.

Shell elevated and acutely turrited, dark horn colour with purple bands; apex acute; whirls about ten and slightly depressed; base angulated; aperture bluish-white and about one fourth the length of the shell.

Hab. West Tennessee, John Lea.
My Cabinet.
Diam. ·5, Length 1·5 inches.

Remarks.—This fine Melania seems most to resemble the *subularis* (Nobis). It differs from it in being wider, in being darker coloured, and in having a less number of whirls. The bands in some specimens are scarcely visible.

I cannot terminate this memoir without making my grateful acknowledgements to numerous friends for specimens sent from time to time for my examination or acceptance. To P. H. Nicklin, Esq. and to W. Cooper, Esq. I am under particular obligations, for their kind and prompt assistance on such difficult points as appeared to me to require consultation.

ARTICLE VI.

Description of a new genus of the family Melaniana of Lamarck.
By Isaac Lea. Read January 7th, 1831.

Family MELANIANA.

Genus Io.

Testâ fusiformi; basi canaliculatâ; spirâ elevatâ; columellâ concavâ lævique.

Shell fusiform; base canaliculate; spire elevated; columella smooth and concave.

Io Fusiformis. Plate XV. fig. 37, a, b.

My Cabinet.
Cabinet of Professor Vanuxem.
Cabinet of Mr Say.
Cabinet of the Academy of Natural Sciences of Philadelphia.
Fusus fluvialis, Say, Journal of the Academy of Natural Sciences of Philadelphia, Vol. 5, p. 129.
Diam. ·9, Length 2·2 inches.

Remarks.—This very remarkable, interesting and rare shell was presented to me many years since by Professor Vanuxem, by whom only it has been found. Specimens were also presented by him to Mr Say

and to the Academy of Natural Sciences of Philadelphia, in the Journal of which that naturalist has described it under the name of *Fusus fluvialis*. Satisfied that no genus should contain pelagian and fluviatile shells in common, I have separated this from the family CANALIFERA, and placed it in that of the MELANIANA to which it naturally belongs. We are indebted to the research of Professor Vanuxem for this and many other fine shells from the north fork of the Holston in Virginia on the farm of General Preston, where it was associated with several species of this and other families. Professor Vanuxem describes the spot which it inhabits as being very circumscribed and being immediately at the confluence of a small stream and the North Fork of the Holston, the former of which is slightly impregnated with salt.

ARTICLE VII.

Report of a Committee of the American Philosophical Society on Astronomical Observations: containing Observations made in different parts of the United States, on the Solar Eclipse of February 12th, 1831. Read October 7, 1831.

THE Committee on Astronomical Observations respectfully present to the Society the observations made by them, in this city, upon the Solar Eclipse of February 12th, 1831; together with such other observations, made in different parts of the United States, as they have been able to collect.

ALEX. DALLAS BACHE.
JOS. ROBERTS, JUN.
ISAIAH LUKENS.

Observations made at Friends' Observatory, in Philadelphia, during the Solar Eclipse of February 12th, 1831. By Jos. Roberts, Jun. Lat. 39° 57′ 02″ N., and long. 5 h. 00 m. 37 sec. West of Greenwich.

For about one month previous to the eclipse, frequent observations were made in order to determine the effect of the temperature on the position of the transit instrument and the rate of the clock. These two essential instruments having been satisfactorily adjusted by means of the transit of stars selected for that purpose, the day was ushered in with the whole heavens obscured by clouds which continued until about half past ten o'clock, A. M., when the clouds generally disappeared, and the heavens in the vicinity of the sun presented the fine clear sky

blue, which continued generally uninterrupted till near one o'clock, P.M.

At 11 h. 23 m. 17 sec. mean solar time, not corrected for the error of the clock and deviation of the transit instrument, observed a slight derangement in the limb of the sun at the point where the eclipse was expected to begin. This break in the harmony (noticed for the last ten or fifteen minutes) continued to increase until a well defined section of the lunar disc convinced me that this derangement was produced by the interposition of the moon.

At noon, observed the transit of the Sun's eastern limb over the lines of the transit instrument, as follows, viz.

	h.	m.	sec.
No. 1.	0	15	16
No. 2.	0	15	36
Merid.	0	15	56
No. 4.	0	16	16.5
No. 5.	0	16	37
	0	15	56.3

reduced time of transit of sun's eastern limb over the meridian.

The daily rate of the clock from numerous observations, $3''.56$ gaining. The clock fast of mean solar time at the beginning of the eclipse, according to the observed transit and daily rate, $0'\ 15''.414$; to this add for deviation of transit instrument from merid. $0''.104$; gives the state of the clock at the beginning of the eclipse, 0 m. 15.518 sec. fast of mean solar time. So that the true mean solar time of beginning of the eclipse was, 11 h. 23 m. 01.482 sec.

At twelve o'clock, mean time, measured the vertical diameter of the sun with one of Troughton's spider-line micrometers, and found that it required 44.855 revolutions of the screw to bring the lines to zero: and near one o'clock, P.M. made the lines of the micrometer tangents to the sun and moon's disc, in order to measure the maximum of the visible portion of the Sun's diameter at the time of the greatest obscuration. These lines I caused to approach each other, until the eclipse ceased to increase; and I *afterwards* found that 1.94 turns of the screw brought them together. It may be proper to remark in

relation to the last observation, that the dread of being involved in a total eclipse by a large collection of clouds near at hand and rapidly approaching, and which completely obscured the sun before I had time to relieve the eye and finish the observation by bringing the lines to zero, has left a doubt as to its exactness. I, however, give it, and *future* observations may determine its value; for after careful inquiry I do not find any corresponding observation in relation to this matter.

At 2 h. 25 m. 24 sec. mean solar time, corrected for the error of the clock, the clouds too dense to see the sun through the coloured glass of the large telescope; but from an observation made with a telescope without a coloured glass, the eclipse had not ended. At 2 h. 25 m. 59 sec. corrected for the error of the clock, still thin clouds before the sun, but have the impression that the eclipse had ceased. At 2 h. 27 m. the sky in the vicinity of the sun very clear, and the eclipse ended beyond any doubt. The preceding observations were made with a 46 inch achromatic telescope by Tully, Islington, London, with a $3\frac{1}{4}$ inches object glass, and a transit instrument by Dollond, London, 30 inches by $2\frac{1}{4}$. The power used 38. The eye protected by a glass of a red colour.

During the eclipse the thermometer and barometer stood as follows, viz.

Time of making observation.	Sixe's Ther. in Observatory.	Mercurial Ther. in Sun.	Spirit of Wine Ther. in Sun.	Troughton's Barometer.	Remarks.
h. m.				ins.	
10 30	29°			30.161	Very clear.
10 45	29	54°	52°	30.161	Do.
11 00	31	56	53	30.164	Do.
11 40	32	"	"	"	Do.
1 00	31	32.5	32	30.150	Flying clouds.
1 10	30.5	"	"	30.141	Dense clouds.
1 25	30	32.5	32	30.141	Do.
2 00	30.5	35	34	30.141	Do.
2 05	31	35	34	"	Flying clouds.
2 45	32	41	38	30.153	Very clear.

Observations of the Beginning and End of the Eclipse of the Sun, February 12, 1831, *by Sears C. Walker, in lat.* 39° 57′ *N. and long.* 1433 *feet west of Friends' Observatory, Philadelphia.*

	h.	m.	sec.		
Beginning,	11	23	10	A.M.	Mean solar time at
End,	2	25	49	P.M.	Observatory.

Telescope $3\frac{1}{2}$ feet achromatic, by Jones, London: power 40 to 50.

Observations made at the time of the Eclipse of the Sun, 2d Month, (February) 12th, 1831, *at Burlington, N. J., lat.* 40° 5′ 20″ *N., long. not yet determined. By John Gummere.*

For the time, I made use of a very good chronometer by Lukens, accurately rated by Jos. Roberts, Jun. and examined the third day after the eclipse. From the regularity of its movement, its state, in Philadelphia time, at the time of the eclipse may be regarded as known within one or at most two seconds. I observed with one of Dollond's 42 inch achromatics, with a power 80. My brother S. R. Gummere observed with my 3 feet Gregorian reflector, with power of 120. At the beginning of the eclipse the sky was very clear, at least in the vicinity of the sun, thus giving the opportunity for an accurate observation. Our impressions of the instant of commencement did not differ half a second. Frequently during the latter part of the eclipse, and at the termination, there were obstructing clouds, so that the time of end could only be determined within limits. The time of beginning accurately determined, was 11 h. 24 m. 2 sec. A.M. mean time Philadelphia. At 2 h. 24 m. 42 sec. P.M. the eclipse had not terminated. At 2 h. 26 m. 21 sec. it was entirely ended.

At the time of greatest obscuration, the cusps were very sharp and well defined; but a thread of light extended from each, to a considerable distance along the circumference of the sun's disc. About a minute after, a spot of light was observed a few degrees from the south western cusp, extending inwards from the thread proceeding from that cusp. Its appearance is represented in the accompanying figure.

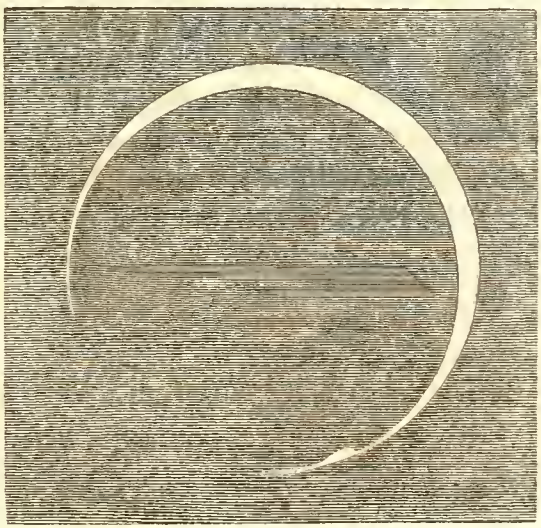
At the commencement of the eclipse the barometer stood at 30.24 inches. At 1 o'clock it stood at 30.16 inches and continued so until end of eclipse.

I had one thermometer suspended in the shade, and three exposed to the sun's rays. The first of these three has a metallic scale, covered in front with a glass; the second has a metallic scale not covered; and the third has an ivory scale. Their states at four different times, as below.

	Shade.	Sun.		
		1st.	2d.	3d.
11 h. 24 m. A.M.	26°	81°	62°	52°
1 h. 0 m. P.M.	24	37	30	29
1 h. 10 m. P.M.	25	31	28	27
1 h. 26 m. P.M.	31	46	37	34

The solar spectrum was observed several times during the eclipse. We were not sensible of much change in it, but thought that about the time of greatest obscuration, the violet, though very bright, was rather paler than at other times.

A 30 inch magnetic needle, made by Lukens, was observed at 11, 1, $2\frac{1}{2}$, and 5 o'clock. From 11 to 1, the north end moved 6′ to the west. From 1 to $2\frac{1}{2}$, it moved 3′ to the west; and from $2\frac{1}{2}$ to 5, it moved 6′ to the east.



Observations of the Solar Eclipse of 12*th February* 1831, *by Professor James Renwick. Made at Columbia College, New York. Lat.* 40° 42′ 43″ *N. Long., determined by the Solar Eclipse of August* 27*th,* 1823 *combined with the mean of* 80 *Lunar distances,* 4 *h.* 56′ 13.45″ *west from Greenwich.*

Beginning. Contact of sun and moon's limbs, observed by a refracting telescope of Dollond of 5 feet focus, using the second astronomic power. The time being noted by a chronometer of Parkinson and Frodshum, No. 1102, rated by Mr Demilt, 23h. 30′ 29″.2

Watch slow of mean time, 21″

Mean time of beginning, 23 h. 30′ 50″.2

The end was not observed in consequence of the sun being hidden by clouds.

Observations of the Eclipse of the Sun, February 12, 1831, *by Robert Treat Paine, at Cape Malabar Light-house, in Lat.* 41° 32′ 58″.3 *N.; Long. by Chronometer* 70° 01′ 20″ *west.*

	h.	m.	sec.		
Beginning of the Eclipse,	11	55	56.0	A.M.	Mean solar time.
Formation of the Ring,	1	26	54.6	P.M.	
Rupture of the Ring,	1	28	23.8	P.M.	
End of the Eclipse,	2	53	8.2	P.M.	

The sky very clear all day; observations very fine and satisfactory. Telescope $4\frac{1}{2}$ feet Dollond, with the smallest astronomical eye piece; power about 60. The thermometer hanging on a S. E. wall in the sun fell from 83° to 29°.

Results of the Observation of the Solar Eclipse of 12th February 1831, made under the Colonnade of the south front of the President's house at the City of Washington, lat. 38° 53′ 12″; long. 76° 57′ (approximate), by F. R. Hassler.

A properly rated chronometer was used for the determination of time, and one of the repeating theodolites from the collection for the survey of the coast, with a one foot vertical circle, for the observations of time, &c. The reduction of the time of the chronometer indicated by the observations being made, gave,

	Apparent time.			Mean time.		
	h.	m.	sec.	h.	m.	sec.
For the Beginning,	10	55	56	11	10	30
End,	2	00	54.5	2	15	28.5

Duration, 3 h. 4 m. 58.5 sec.

Stand of the barometer observed about 9 o'clock, A.M. 30.62 ins. Beginning of the Eclipse, 30.56 ins. and hardly varied for 0.01 in. the rest of the day.

The thermometer stood as follows:

At 8 o'clock, A.M.	29.5° Fahr.
Beginning of Eclipse,	32.0
Greatest obscuration,	28.0
End of the Eclipse,	37.0
At 4 o'clock, P.M.	38.0
Sunset,	32.0

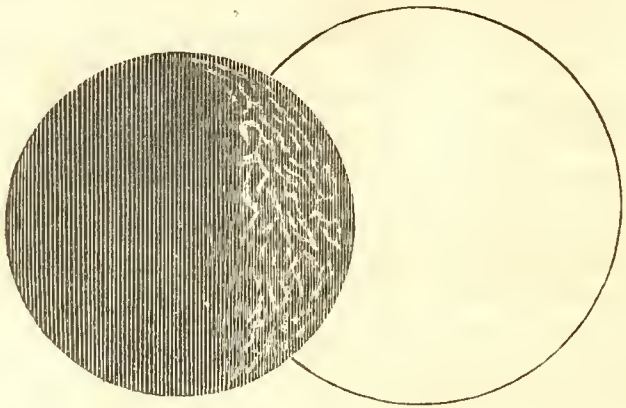
The sky was perfectly clear, the weather generally cold, with a harsh wind. During the greatest obscuration the feelings of an intense cold, and a kind of disagreeable gloom, were remarked by every person present, which subsided only when a considerable part of the sun was again clear.

The most remarkable phenomenon was the distinctly painted inequalities of the moon, by the reflection of light and shade upon its disk, presenting, apparently, elevations brilliantly illuminated, and intervals shaded in an ash coloured shade, more or less dark and distinct, as they were nearer to or farther from the sun, the edge of the moon towards the sun being always fully dark.

This appearance, beginning when about one-eighth of the diameter of the moon was immersed, extended itself, with various alterations in the

appearance, to about one-third of the moon's diameter, when it gradually faded into indistinctness, and the whole surface of the moon appeared equally dark. The same took place again in the inverse order, with varied configurations, towards the end of the eclipse.

The telescope with which I observed being very steady, that on the repeating theodolite, with a magnifying power of about 70 times, the phenomenon could be distinctly observed and followed; the annexed imperfect figure may convey an idea of it.



Observations on the Eclipse of the Sun, February 12, 1831, *by Professor R. M. Patterson, M.D., at the University of Virginia, in lat.* 38° 2′ 3″ *N., and long.* 5 *h.* 14 *m.* 4.8 *sec. W. of Greenwich.*

	h.	m.	sec.	
Beginning of Eclipse,	11	0	26	Mean solar time.
End,	2	7	20	

Meteorological Observations during the Solar Eclipse of February 12*th*, 1831, *by A. D. Bache, Professor of Natural Philosophy and Chemistry in the University of Pennsylvania.*

The principal objects in view in the following observations were, first: to measure the diminution of light produced by the eclipse; that of direct light, as well as of the light diffused by reflection in the atmosphere and from bodies at or near the earth's surface.

Second, to measure the variations in the temperature of the air during the eclipse.

The instrument adapted to the measurements first enumerated is the photometer of Leslie: this consists of a differential thermometer having one bulb blackened. The blackened bulb absorbs the heat accompanying the solar light, while the transparent bulb either transmits or reflects it; the temperature of the dark bulb is raised, the air within it is expanded, and the liquid forced up the stem attached to the opposite bulb: the amount of the rise of the liquid is measured by a scale attached to this stem. The effect of variations in the temperature of the air about this instrument is in a great measure avoided by its differential form. The graduation of the scale of the photometer is arbitrary, and the measures which it gives entirely relative. It will be convenient to place the zero at the point at which the liquid in the stem stands in a dark room.

The photometer used in the observations upon the direct light of the sun had one bulb covered with black silk. The observations have been reduced to the point of the scale, which corresponds to a dark room as a zero. A glass case protected the instrument from currents of air. The position remained invariable during the course of the observations, viz. at the south window of the observatory attached to the Friends' school in Fourth-street.

A second photometer was placed within the observatory and exposed to the diffused light, which entered through three windows extending nearly from the floor to the ceiling and facing the S.E., South, and S.W. One bulb of this instrument was of blue glass. The observations have, as in the case of the other photometer, been reduced to the point at which the liquid stands in a dark room as a zero: the degrees do not correspond with those of the first instrument. A glass case covered this photometer.

The second object was attained by the use of a metallic thermometer of Breguet's make, for the opportunity of using which I am indebted to C. N. Bancker, Esq. This instrument was placed in the shade within the south window of the open observatory. There had been no fire during the winter in the observatory, nor, but on a few occasions, in the building with which it is connected. A comparison of

the scale, attached to this metallic thermometer, with that of a mercurial thermometer carefully verified, was made subsequent to the day of observation, and extended through a considerable range of temperature, obtained by atmospheric variations; there resulted a correction in part of the scale, which has been applied in converting the degrees of Breguet's scale into those of Fahrenheit.

The compound effect produced by the heat from the direct and reflected rays of the sun and by the temperature of the atmosphere was noted, as affording a check upon the observations made with the photometer in the sun and thermometer in the shade. To measure this a thermometer having the bulb blackened was exposed to the direct rays of the sun by placing it in the south window of the observatory. The thermometer was one made by Bate, the scale was metallic, and the instrument uninclosed by a case: the freezing point had been verified to guard against the effect of a variation in the scale, which has been found in many cases to take place after the graduation of the instrument.

In addition to the principal observations, others were made from time to time with the hygrometer and barometer. The hygrometer was a dew-point instrument of the kind described by Jones in the Transactions of the Royal Society of London for 1826: it consisted of a mercurial thermometer with a small bulb of blue glass; one of the hemispheres into which this bulb would have been divided by a vertical plane, was covered with a piece of stuff held in its place by a metallic ring which served further to prevent the ether used in cooling the bulb from flowing over the uncoated part.

The height of the mercury in a common barometer belonging to the observatory was recorded.

On the morning of the twelfth, from about nine o'clock until some minutes before the coming on of the eclipse, the sun was obscured by dense clouds. At this latter period the clouds had been dispersed and a tolerably favourable state of weather succeeded, the observations being interfered with but occasionally by passing clouds. About ten minutes after the time of greatest obscuration clouds again came up, and varying only in density, continued with but one short interval, until night.

Observations were made upon the photometer in the sun, and upon the thermometers at intervals, generally, of five minutes during the

time of the eclipse. During the most interesting period, the half hour between half past twelve and one, containing the time of greatest obscuration, the photometer in the sun was observed every minute. The record of the observations is extended throughout the period of the eclipse notwithstanding the unfavourable state of the weather, that the influence of the eclipse upon the instruments may be distinctly seen, independently of the loss of light from the interference of clouds. The instruments had been placed in appropriate situations at the University two days preceding that on which they were to be used, and their indications recorded hourly that the faults of observation might be reduced to a small limit. They were likewise observed hourly two days subsequent to the twelfth, that if any derangement had occurred, it might not escape detection.

A table is subjoined containing a record of the observations upon the photometers and thermometers, beginning with that at 11 A.M. on the 12th of February, and terminating with the observation at 2 h. 35′ P.M. The first two columns contain the times of observation, given by the astronomical clock of the observatory; the third the heights of the photometer exposed to diffused light; the fourth those of the photometer exposed to the direct rays of the sun; in the fifth are recorded the states of the atmosphere at the times of observation; in the sixth the temperature as shown by a thermometer in the shade; in the seventh the checks afforded upon the observations in columns four and six by the heights of the thermometer with the blackened bulb exposed to the direct rays of the sun.

The results of observations upon the dew-point and upon the barometer are placed in the remarks upon the table by which it is followed.

Time.		Photometer in shade.	Photometer in Sun.	Remarks on Weather.	Breguet's Thermometer.	Ther. with blackened bulb.	Remarks.
Hours.	*Mins.*	*Degs.*	*Degs.*		*Degs. of Fahr.*	*Degs. of Fahr.*	
				Cloudy.			
11		9	62	Clouds less dense. -	36	48½	
11	10	9	51½	Clouds more dense. -	33¼	58½	
11	23			Clear. - - -			*Eclipse begins.*
11	30	9	61½	Fleecy clouds. - -	35½	66½	
11	36	9	57	Almost clear. - -	36		
11	40	8½	56	Clear, with occasional	35¼	63	
11	50		50	fleeces over ⊙. -	35	63	
11	55	8	47	Slight haze. - -	34¾	62	
12	05	8	41	Clear. - - -	34½	58	
12	10	7½	37	" - - -	34.	54½	
12	20	7	31	" - - -	33¾	49½	
12	25	5	29	A cloud begins. -	33¾	49	
12	30	4½	22	Cloud over ⊙. -	33¼	45½	
12	35		18½	Cloud passing off. -	32¾	41½	
12	40		15	Clear. - - -	32½		
12	41		15¼	" - - -			
12	42		14½	" - - -	32¼		
12	43		14	" - - -			
12	44		14	" - - -	32½		
12	45		13	" - - -	32	38	
12	46		12	" - - -			
12	47		12	" - - -			
12	48		8	Cloud passing. - -	32½	36	
12	49		9½	Cloud off. - -			
12	50		10	Clear. - - -	32	35½	
12	51		8	Cloud. - - -			
12	52		7	Edge of cloud over ⊙.	31¾		
12	53		6½	" " - -		34	
12	54		7	Clear. - - -		34	
12	55		6½	" - - -	31½	33½	
12	56		5	" - - -			
12	57		4½	" - - -	31½	32½	
12	58		4	" - - -			} Time of greatest obscuration by observations.
12	59		4	" - - -	30¾	31½	
1	00		4½	" - - -			
1	05	3	4½	" - - -	30¾	30½	
1	10		5½	Clouds. - - -	30¾	30½	
1	15	4	6	Less dense. - -	30¾	31	
1	20	4	6½	Dense cloud. - -	30¾	31½	
1	25	6	12	Cloud. - - -	30¾	33	
1	30	5	8	Dense cloud. - -	30¾	32	
1	35	5	9	Clouds. - - -	30¾	32	
1	40	5½	10	" - - -	31	31½	
1	45	6	11	" - - -	31½	35	
1	50	6	11½	" - - -	31½	35	
1	55	6½	15	Clouds less dense. -	32	36	
2	00	5½	11	Dense clouds. - -	32	37	
2	05		13½	Less dense. - -	32½		
2	10	5½	11	Very dense black clouds			
2	15		10	" " - -			
2	20		10	" " - -	32	36	
2	23	6½	13	Clouds passing off. -			
2	26		14	Less dense. - -			*Eclipse ends.*
2	29		42	Clear. - - -			
2	30		51	" - - -	35		
2	35	7	27	Clouding over. -	35¾	56	

It appears from the table just given, that the liquid in the stem of the uncoated bulb of the photometer in the sun began to descend, from the time of the first observation after the beginning of the eclipse; a descent only occasionally interrupted by the effect of flying clouds; that the minimum was reached at 12 h. 58′ a 59′, when a rise of the liquid commenced, which was progressive notwithstanding the coming up of clouds. At one o'clock with a clear sky, the instrument stood at $4\frac{1}{2}$ degrees, while at ten minutes after one with a white cloud interposed, but with the eclipse less on, it stood at $5\frac{1}{2}$ degrees: at twenty minutes past one, with a dense cloud covering the sun, the photometer had risen to $6\frac{1}{2}$ degrees, and at fifteen minutes past two, dense black clouds intervening, stood at 10 degrees.

The time of greatest obscuration given by the photometer affords a fair test of its sensibility. Correcting the calculated time as given in the American Almanac for the difference between the time of beginning as observed by Mr Roberts and the calculated time there given, the time of greatest obscuration to the nearest minute was 12 h. 57′. The observed minima of the photometer being at 12 h. 58′ and 12 h. 59′, the true minimum is fairly inferred to be at 12 h. $58\frac{1}{2}'$, or within one minute and a half of the calculated time of greatest obscuration.

Observations made at 1 P.M. of the 13th and 14th of February, gave 56.5 degrees of this photometer for the amount of light at that hour; at the time of greatest obscuration on the 12th (within a few minutes of one o'clock), the photometer stood at 4 degrees. We may calculate from these data the proportion of the solar disc which remained unobscured at the time referred to, on the 12th. For as 56.5, the measure of the light from the unobscured disc : 4, the measure at the same time on the 12th, viz. at the time of greatest obscuration : : 1 : proportion of the disc remaining unobscured, which is, therefore, $\frac{1}{14.1}$, or about $\frac{1}{14}$th of the whole disc. The calculation of this luminous area from the data afforded by the tables, viz. the semi-diameters of the sun and moon, together with the number of digits eclipsed, as given by the observations of Mr Roberts (11.481 digits), gives 20,500″ for this area, or $\frac{1}{14.5}$ of the whole disc. The near agree-

ment of these results seems to confirm the observations* that the degree of light near the edges of the sun's disc is as great as that at the centre, contrary to what was supposed by Bouguer when he drew from his observations the inference of the existence of a solar atmosphere.

The diffused light, as shown by the heights of the photometer in the shade, followed in its decrease the diminution of the direct light, as observed by the instrument in the sun; when observations with the latter instrument were made at short intervals it was necessary to neglect the former. The object in view in the use of this instrument was to determine the measure of the diffused light in terms of the light of a clear day at some period before sun-set; the situation was found to render accuracy in this result impossible.

The thermometer in the shade began to fall within at least thirteen minutes after the commencement of the eclipse, the interruption from fleecy clouds preventing the precise time from being ascertained. The fall was steady until 12 h. 59′, when the minimum was reached; the temperature had not risen at 1 h. 5′, owing to the coming up of clouds, this circumstance preventing the diminution of the eclipse from being felt. At half past eleven A.M. this thermometer stood at $35\frac{1}{2}^\circ$ F.: the minimum was $30\frac{3}{4}^\circ$ F., giving, if we disregard the effect of passing clouds, an absolute decrease of temperature due to the eclipse, of $4\frac{3}{4}^\circ$ F. To this we must add for the total effect the preventing an increase of heat as the sun approached the meridian. To the effects of this change those persons who were in the open air in the shade were exposed.

The test of the measurements of the photometer in the sun and thermometer in the shade, afforded by the thermometer with the blackened bulb, gives evidence of the satisfactory performance of both those instruments. This thermometer stood at $66\frac{1}{2}^\circ$ F. at 11 h. 30′, when a fall commenced which was parallel with that of the photometer until the temperature of the air was nearly reached, when the effect of the coldness of the air, aided by the influence of clouds, caused a further descent, while the photometer had begun to rise; with this instrument it soon resumed a parallel course at a lower temperature

* Francœur, Uranographie, pp. 71 and 72.

than corresponded to the degrees of the photometer, in descending. The difference of the minima of the two thermometers is but one-fourth of a degree, a quantity less than the error of observation to which such instruments are liable. The fall of the thermometer in the sun was from $66\frac{1}{2}^\circ$ to $31\frac{1}{2}^\circ$ from the effect of the eclipse; the total fall during the eclipse from $66\frac{1}{2}^\circ$ to $30\frac{1}{2}^\circ$, or 36 degrees. To the effects of such a change those who were exposed to the direct rays of the sun, from half past eleven until one o'clock, were subjected. The sensation of cold felt during the middle of the eclipse is thus easily accounted for, a sensation which would have warranted the belief of the exposure to a temperature much lower than $30\frac{1}{2}^\circ$ F. If any confirmation could be required in relation to the accuracy of the thermometer in opposition to the fallable test of the sensation of cold, it was to be had in the fact that the water which had thawed in the sun before the commencement of the eclipse did not recongeal until towards night-fall.

The barometer varied but slightly during the day: at noon it stood at 30.115, at one o'clock at 30.105, and at five P.M. at 30.105.

The dew-point varied about $3\frac{1}{2}^\circ$ F. during the day; it fell to one of its minimum points, 8° F., during the eclipse.

I subjoin the results of the observations made for me at the University, by an intelligent assistant, upon the power of the lens to produce combustion. The burning powers of two double convex lenses were tried at intervals: the smaller lens has a diameter of six inches and focal length six and three-fourths inches; the larger is eighteen inches in diameter with a focal length of twenty-five inches: for the use of this latter I am indebted to Dr Hare.

The smaller lens ceased to set fire to agaric at 12 h. 49′, or about eight minutes before the time of greatest obscuration. The larger lens lost its power of burning white paper at 12 h. 36′, and of setting fire to agaric at 12 h. 53′, about four minutes before the time of greatest obscuration. The state of the atmosphere prevented the confirmation or correction of these results by observations after the time of greatest obscuration.

ARTICLE VIII.

Synopsis Fungorum in America Boreali media degentium. Secundum observationes Ludovici Davidis de Schweinitz. Communicated to the American Philosophical Society, Philadelphia, 15 April 1831.

PRAEMONENDA.

POSTQUAM celeberrimus Schwaegrichen in Commentariis Societatis Naturae Curiosorum Lipsiensis, Synopsin meam Fungorum Carolinae superioris ante annum 1818 collectorum benevole curavit in lucem prodire; ad annum 1821 assidue consecutus sum eandem viam, perscrutans nempe fungos Carolinae superioris. Sub finem autem anni jam dicti, in paterna mea domicilia Bethlehem, Northampton County, Pennsylvaniae demum redux, ad hunc diem usque, etiam Pennsylvaniae thesauros mycologicos, indefessus colligere, describere et determinare conatus sum.

Botanophili Americani plurimi jam mihi propinquiores, quam degenti olim apud occidentales Carolinenses, penitus toto ab orbe divisos, summa benevolentia et summo studio, quos ipsi invenerant aut quos illis aliunde missi sunt communicaverunt, prae ceteris amicissimus doctissimusque D. John Torrey, Noveboracensis Universitatis Professor. Interim etiam datum fuit, quod ante annum 1818 mihi non contigerat, Systemata Neesii, Linkii, denique Friesii acutissima, maxima cum voluptate et summo fructu in succum et sanguinem vertere et certior fieri, viam ad vera naturae mysteria in operibus illorum indicatam esse.

Dilectissimum mihi fuit, admirare transatlanticas observationes illorum illustrium virorum tam mire coincidentes observationusculis meis cisatlanticis—et systemata, quae summum horum Coryphaeorum scientiae acumen, vix tamen nisi Europaeos fungos rite cognoscentium eruerat, fere in quoque essentiali momento, corroborata, probata et stabilita, ex omni facto quod mihi in mycologia Americana innotuerat. Numerus interea specierum a me nuperrime in Pennsylvania inventarum adeo creverat, quanquam feracissimas regiones fungorum, sylvas nempe ingentes versus septentrionem tam fagineas quam pineas, vix semel aut bis, et tum, sicut pede volante, mihi datum fuit explorare, ut non dubitandum me gratum botanophilis opus ac utile scientiae in lucem edere conspectus omnium hucusque mihi cognitorum publicando. Est quod in libello sequenti mihi proposui, eandem methodum adoptans, quam in Synopsi Fungorum Carolinae, et jam prius in conspectu fungorum Lusatiae superioris consecutus sum, i. e. breviter allegatos invenies jam prius descriptos, fusius autem ac diagnosi addita, quos novos dixi et nominavi. Nemo enim adire potest Mycologiae studium, expers operum Friesii, Linkii et ceterorum Coryphaeorum ; igitur non operae pretium sit, quae ab iis jam tractata semper ad nauseam usque repetere. Sunt autem inter Americanos fungos fere omnia genera Neesii, Linkii, Friesii, Kunzii, mihi obvia, identidem ut apud illos descripta; et revera paucae sunt species, nisi parasiticae in matrice omnino Americanis carente, quae non cives aeque ac Europae etiam nostrates; quod testimonium semper censui, nil absurdius esse sententia eorum, qui naturam in mycis mere pro lubitu formis fortuitis, inconstantibus nobis illudere credunt.

Ceterum procul fuit novum systema condere, aut innovare in conditum. Nihil in animo est quam observata ac facta in usum communicare Procerum gentis mycologicae. Nihil aliud invenies in hoc libello. In primis classibus, a Hymenomycetibus, per Pyrenomycetes, ad majorem partem Gasteromycetum, clarissimi Friesii opera, species complectentia, nobis duces fuerunt. Cetera ex classe Gasteromycetum, ob defectum tertii Tomi Mycologiae Friesii, coactus fui ex Persoonii et Sprengelii operibus supplere. Quoad Hyphomycetes et Gymnomycetes, denique Linkius optimus, in continuata Willdenovii editione specierum plantarum, in promptu fuit.

Necesse vix est, plura verba addere ; in mentem autem revocari

optimum, regiones Carolinae ac Pennsylvaniae a me accuratius perscrutatas (pauci tantum sunt fungi aliunde mihi communicati) vastissimis Reipublicae ceteris regionibus, comparatas, de quibus mycologiae nihil noscitur, tam minimam partem constituere, ut nullimodo libello nostro titulum Synopseos Fungorum Americanorum, sensu generaliori vindicare velim, sed solummodo secundum meas observationes. Nam innumeri adhuc latent, praesertim incolae, in borealibus, istarum ingentium sylvarum ex Fago ferruginea, et ex Pino Canadensi formatarum; et in partibus australioribus et maritimis Carolinae ac Georgiae, fere omnes, qui, sine dubio, incolunt interminabiles sylvas ex Pino palustri et Cupresso disticha constitutas, decus et crux (ob lethalia eorum miasmata) patriae; ut taceam molem fungorum, qui parasitice addicti sunt, arboribus et plantis, indigenis solummodo regionibus mihi ignotis.

Finaliter superest systematis conspectum paucis verbis, ut in nostro libello exponitur, adducere.

FUNGI

Plantae sunt homonemacae, velatae, per basin nutritae, organis simul explicatis, receptaculis in fructum abientibus.

A. ASCOMYCETES.

Gerentes Sporidia *ascis* inclusa, nempe

Class. I. *Hymenomycetes*, in receptaculo aperto.

Class. II. *Pyrenomycetes*, intra perithecia.

B. SPOROMYCETES.

Gerentes Sporidia libera non in ascis.

Class. III. *Gasteromycetes*. Sporidia libera intra peridio.

Coniomycetes Friesii. Sporidia absque peridio.

Class. IV. *Hyphomycetes*. Sporidia thallo immediate imposita.

Class. V. *Gymnomycetes*. Sporidia sporidochio imposita.

Classis I. HYMENOMYCETES.

Ord. 1. *Pileati*. Hymenio infero.
Ord. 2. *Elvellacei*. Hymenio supero.
Ord. 3. *Clavati*. Hymenio amphigeno.
Ord. 4. *Tremellini*. Hymenio confuso.

Classis II. PYRENOMYCETES.

Ord. 1. *Sphaeriacei*. Perithecio ascigero, ostiolato.
Ord. 2. *Phacidiacei*. Perithecio ascigero rumpente.
Ord. 3. *Cytisporei*. Perithecio sporidifero, ostiolato.
Ord. 4. *Xylomacei*. Perithecio sporidifero rumpente.

Classis III. GASTEROMYCETES.

Ord. 1. *Angiogastres.* Sporidia inclusa in receptaculo a peridio discreto.
Ord. 2. *Trichospermi.* Sporidia nuda, floccis inspersis a peridio discrentis.
Ord. 3. *Trichodermacei.* Sporidia nuda, floccis tecta peridium sistentibus.
Ord. 4. *Sclerotiacei.* Sporidia immersa in receptaculo, peridium constituente.

Classis IV. HYPHOMYCETES.

Ord. 1. *Trichomyci.* Floccis sporidiferis decumbentibus sporidiis inspersis.
Ord. 2. *Byssacei.* Floccis sporidiferis erectis sporidiis tandem inspersis.
Ord. 3. *Mucedines.* Floccis sporidiferis erectis sporidiis in sporisoriis accumulatis.
Ord. 4. *Acremonii.* Sporidiis floccis innatis aut adnatis.
Ord. 5. *Mucorini.* *Sporangia* floccis innata aut adnata.
Ord. 6. *Byssei.* Floccis totis ex articulatis sporidiis.
Appendix. 7. Plus minus aspori.

Classis V. GYMNOMYCETES.

Ord. 1. *Entophyta.* Sporidochio spurio, thallo nullo.
Ord. 2. *Tuberculariní.* Sporidochio vero, sporidiis instratis seu inspersis.
Ord. 3. *Sporodermei.* Sporidochio vero, sporidiis innatis.

Desunt nobis sequentia genera ex quaque classe:

I. *Ex Hymenomycetibus.*
Xerotes, F. Africa.
**Nyctalis*, F. Europ.
II. *Ex Pyrenomycetibus.*
Hypoopila, F. Tropicis regionibus.
Corynelia, F. Tropicis regionibus.
**Strigula*, F. Tropicis regionibus.
**Meliola*, F. Tropicis regionibus.
**Stegia*, F. Europ.
**Sphinctrina*, F. Europ.
III. *Ex Gasteromycetibus.*
Baltarca. Europ.
Lysurus. Trop.
Ascroe. Trop.
Polygaster. Trop.
Endogone. Europ.
**Polysaccum.* Europ.
Diploderma. Europ.
Cirrholus, F. Bras.
Amphisporium. Europ.
Mylitta. Europ.
**Podosphaeria.* Europ.
**Lasiobotrys.* Europ.
IV. *Ex Hyphomycetibus.*
Diplosporium. Lk.
**Phycomyces.*
Thelactis.
Didymocrata.
Diamphora.
**Antenaria.*
**Amphitrichum.*
V. *Ex Gymnomycetibus.*
**Epichysium.*
* *Phragmotrichum.*

Nota.—Quae asterisco notata mihi nota et in Herbario.

Nova genera perpauca sunt nostra, nempe

1. *Dryophilum.* Gasteromycetum.
2. *Podosporium.* Hyphomycetum.
3. *Ceratosporium.* Gymnomycetum.
4. *Clasterisporium.* Gymnomycetum.
5. *Sphacrosporium.* Gymnomycetum.
6. *Botryosporium.* Gymnomycetum.
7. *Lichenopsis.* Gymnomycetum.

Species ceterum Synopsi sequente quae asterisco praefixo notatae sunt indicant quae non in synopsi Caroliniani jam recitatae. Quibus signum L. v. S. additur, aut in priori opere aut in praesenti jam primum a me descriptae aut nominatae sunt.

Classis Prima. HYMENOMYCETES.

Ordo I. PILEATI.

Subordo I. AGARICINI.

Genus 1. Agaricus.

Nota.—In hoc genere omnino secutus sum Friesii dispositionem in *Systemate Mycologico*, Vol. I., neglectis novis ejusdem operibus, quia nuperrime Agaricorum vix ullo auctus est numerus jam in *Synopsi Fungorum* Carolinae superioris recensitus. In Pennsylvania nempe, quanquam plurimi Agarici jam in Carolina inventi iterum obvii; novi paucissimi a me additi sunt, non defectu specierum in sylvis nostris, sed quia tam occupatus fui, examinatione specierum fungorum preservabiliorum ceterorum, ut, hucusque, tempus mihi omnino deficiebat has species rite et caute denuo examinandi. Ab amicis autem e longinquo Agaricos, tam evanidos, mihi communicari, vix erat expectandum. Equidem nunc igitur Agaricos ne nomine tantum recensere, in animo fuit—sed quia in *Synopsi Carol.* tantum methodo Persooniano nóminati sunt—melius putavi, hac secundum Friesii dispositionem eos repetere, citatis locis Friesii et Synopseos Carolinae. Exclusis Agaricis, autem, totam Mycologiam maxime auctam his regionibus per novem annos assidue excolui.

α Leucospori.

Subgen. 1. AMANITA.

1. 1. A. A. *phalloides*, Fr. Syst. p. 13, Syn. Car. 6, 7, 8, num. var. *α bulbosa, β citrina, γ viridis*, omnes etiam Pennsylv.
2. 2. A. A. *vaginatus*, F. 14, Syn. Car. 1 and 2 num. (livida et spadicea) et. Pennsylvania.
3. 3. A. A. *caesareus*, F. 15, Syn. Car. 9 and 10 (caesa. et aurantiaca).
4. 4. A. A. *muscarius*, F. 16, Syn. Car. 11, rar. Pennsylv.
5. 5. A. A. *pantherinus*, F. 17, Syn. Car. 12, (umbrinus) et. Pennsylv.
6. 6. A. A. FARINOSUS, L. v. S. Syn. Car. 16, solummodo Carolin.
*7. 7. A. A. *excelsus*, F. 17, passim in sylvis Carolinae, non in Synops. (amplius Pers.)
8. 8. A. A. *rubescens*, F. 18, Syn. Car. 13, et. Pennsylv.
9. 9. A. A. *virescens*, F. p. 19, Syn. Car. 14.
10. 10. A. A. *asper*, F. 18, Syn. Car. 15.
11. 11. A. A. PUBESCENS, L. v. S. Syn. Car. 17.

Subgen. 2. LEPIOTA.

12. 12. A. L. *procerus*, F. p. 20, Syn. Car. 555, et Pennsylv.
13. 13. A. L. *clypeolarius*, F. p. 20, Syn. Car. 556 et 558, colubrinus et felinus,—etiam Pennsylv.
14. 14. A. L. *cristatus*, F. p. 22, Syn. Car. 557, et. Pennsylv.
15. 15. A. L. *delicatus*, F. p. 23, Syn. Car. 559 (mesomorphus).
16. 16. A. L. *granulosus*, F. p. 24, Syn. Car. 560, et carcharias.

Subgen. 3. ARMILLARIA.

17. 17. A. A. *robustus*, F. p. 26, Syn. Car. 561.
18. 18. A. A. *bulbiger*, F. p. 27, Syn. Car. 568.
19. 19. A. A. *mucidus*, F. p. 28, Syn. Car. 562, et. Pennsylv.
20. 20. A. A. *melleus*, F. p. 33, Syn. Car. 566 (polymyces).

Subgen. 4. LIMACIUM.

21. 21. A. L. *chrysodon*, F. p. 32, Syn. Car. 662.
22. 22. A. L. *erubescens*, F. p. 32, Syn. Car. 663.
23. 23. A. L. *eburneus*, F. p. 33, Syn. Car. 660.
24. 24. A. L. *discoideus*, F. p. 33, Syn. Car. 661.
25. 25. A. L. *purpurascens*, F. p. 34, Syn. Car. 664.
*26. 26. A. L. *tephraleucus*, F. p. 34, Salem, in sylv. pin.

Subgen. 5. TRICHOLOMA.

27. 27. A. T. *fulvus*, F. p. 37, Syn. Car. 607 (trichopus).
28. 28. A. T. *ustalis*, F. p. 37, Syn. Car. 608 (leucophyllus).
29. 29. A. T. *luridus*, F. p. 40, Syn. Car. 621, et. Pennsylv.
*30. 30. A. T. *aurantius*, F. p. 39, Erie County, Pennsylv.
31. 31. A. T. *luteovirens*, F. p. 41, Syn. Car. 622, et. Pennsylv.
32. 32. A. T. *flavovirens*, F. p. 41, Syn. Car. 619, et. Pennsylv.
33. 33. A. T. *vaccinus*, F. p. 42, Syn. Car. 591.
34. 34. A. T. *myomyces*, F. p. 44, Syn. Car. 646, et. Pennsylv.
35. 35. A. T. *columbella*, F. p. 44, Syn. Car. 659 (albus).
36. 36. A. T. *maculatus*, F. p. 45, Syn. Car. 669, et Pennsylv.
37. 37. A. T. *sejunctus*, F. p. 47, Syn. Car. 620 (leucoxanthus).
38. 38. A. T. *personatus*, F. p. 50, Syn. Car. 576 (bicolor).
39. 39. A. T. *humilis*, F. p. 51, Syn. Car. 656, et. Pennsylv.
40. 40. A. T. *nudus*, F. p. 52, Syn. Car. 573, et. Pennsylv.

Subgen. 6. RUSSULA.

41. 41. A. R. *alutaceus*, F. p. 55, Syn. Car. 759, 762, 753, varietates *alutaceus, olivascens, ochraceus* omnes etiam Pennsylvania occurrunt.
42. 42. A. R. *luteus*, F. p. 55, Syn. Car. 752, et. Pennsylv.
43. 43. A. R. *nitidus*, F. p. 55, Syn. Car. 756 et 759, nitidus et nauseosus,—et. Pennsylv.
44. 44. A. R. *emeticus*, F. p. 56, Syn. Car. 747, cynoxanthus 757, ochroleucus 754, omnes Pennsylv.
45. 45. A. R. *fragilis*, F. p. 57, Syn. Car. 749 fragilis, et 744 niveus.
46. 46. A. R. *depallens*, F. p. 58, Syn. Car. 748, et. Pennsylv.
47. 47. A. R. *ruber*, F. p. 58, Syn. Car. 746, rosaceus, et. Pennsylv.
48. 48. A. R. *foetens*, F. 59, Syn. Car. 755, et Pennsylv.
49. 49. A. R. *furcatus*, F. 59, Syn. Car. 766 (*lacteus* 745, *virescens* 761, *lividus* 758), om. et. Pennsylv.
50. 50. A. R. *aureus*, Pers. Synop. Syn. Car. 751.
51. 51. A. R. *adustus*, F. 60, Syn. Car. 780, omph. adusta, etiam Pennsylvania.

Subgen. 7. GALORRHEUS.

52. 52. A. G. *torminosus*, F. p. 63, Syn. Car. 733.
53. 53. A. G. *necator*, F. p. 64, Syn. Car. 741.
54. 54. A. G. *acris*, F. p. 65, Syn. Car. 742.
55. 55. A. G. *pallidus*, F. p. 67, Syn. Car. 735.
56. 56. A. G. *deliciosus*, F. p. 67, Syn. Car. 737, et. Pennsylv.
57. 57. A. G. *volemus*, F. 69, Syn. Car. 736, *testaceus*.
58. 58. A. G. *subdulcis*, F. 70, Syn. Car. 739.
59. 59. A. G. *helvus*, F. 72, Syn. Car. 738 (ruber).
60. 60. A. G. *flexuosus*, F. 74, Syn. Car. 734.
61. 61. A. G. *piperatus*, F. 76, Syn. Car. 732, etiam frequens Pennsylv.
62. 62. A. G. INDIGO, L. v. S., Syn. Car. 743, valde frequens est sylvis Pennsylvaniae, interdum maximus.
*63. 63. A. G. *theiogalus*, F. n. rarius, Pocono in sylvis montosis Pennsylv.

SUBGEN. 8. CLITOCYBE.

64. 64. A. C. ILLUDENS, L. v. S., Syn. Car. 604. Insignis hic fungus vulgatissimus ineunte autumno sylvis Pennsylv.
65. 65. A. C. *giganteus*, F. 80, Syn. Car. 772 (Omph. maxima).
66. 66. A. C. *gilvus*, F. 81, Syn. Car. 764, (Omph.) et. Pennsylv.
67. 67. A. C. *gibbus*, F. 81, Syn. Car. 765.
68. 68. A. C. *phyllophilus*, F. 83, Syn. Car. 776.
69. 69. A. C. *clavipes*, F. 86, Syn. Car. 652.
70. 70. A. C. *nebularis*, F. 86, Syn. Car. 650, et. Pennsylv.
71. 71. A. C. *fumosus*, F. 88, Syn. Car. 648, et. Pennsylv.
72. 72. A. C. *viridis*, F. 90, Syn. Car. 627.
73. 73. A. C. *odorus*, F. 90, Syn. Car. 626.
74. 74. A. C. *candicans*, F. 91, Syn. Car. 774.
75. 75. A. C. *cretaceus*, F. 95, Syn. Car. 667.
*76. 76. A. C. *cerinus*, F. 89, rarius circum Bethlehem.
77. 77. A. C. *pratensis*, F. 99, Syn. Car. 605.
78. 78. A. C. *psittacinus*, F. 102, Syn. Car. 636.
79. 79. A. C. *laetus*, F. 102, Syn. Car. 634.
*80. 80. A. C. *ceraceus*, F. 102, Syn. Car. non sed postea Salem inventus.
81. 81. A. C. *conicus*, F. 103, Syn. Car. 635, et. Pennsylv.
82. 82. A. C. *coccineus*, F. 105, Syn. Car. 633.
83. 83. A. C. *laccatus*, F. 107, Syn. Car. 770, (O. farinacea) freq. etiam Pennsylv.
84. 84. A. C. *amethystus*, var. β, mihi spec. distinct. Syn. Car. 786.
85. 85. A. C. *bellus*, F. 107, Syn. Car. 767 (Omphal.).
86. 86. A. C. *sulphureus*, F. 110, Syn. Car. 625.
*87. 87. A. C. *melaleucus*, F. 114, Salem inventus, non in Synop.
88. 88. A. C. *platyphyllus*, F. 117, Syn. Car. 657.
89. 89. A. C. *cuneifolius*, F. 116, Syn. Car. 649 (atrocinereus).
90. 90. A. C. *radicatus*, F. 118, Syn. Car. 612, freq. et. Pennsylv.
91. 91. A. C. *velutipes*, F. 119, Syn. Car. 613, et Pennsylv.
*92. 92. A. C. TENUIPES, L. v. S., inter folia putrescentia Bethlehem. Affinis A. *velutipedi*, sed differt contextu pilei.

A. Pileo ferrugineo-spadiceo, tenui (1—unciali diametro), submembranaceo nec carnoso, margine substriato. Lamellis latiusculis pallidis. Stipite, apice lamellis concolore, longissimo, 6—12 unciali, radicato, deorsum subattenuato, crassitie pennae corvinae, velutino et, ut *velutipes*, hirsutie tecto, substriato et versus basin flexuoso. Pilei centrum depressum et subumbonatum evadit. Solitarie crescit.

93. 93. A. C. *butyraceus*, F. 121, Syn. Car. 608 (trichopus).
94. 94. A. C. *asimus*, F. 121, Syn. Car. 658.
95. 95. A. C. *confluens*, F. 123, Syn. Car. 666 (rufocinnamom.).
96. 96. A. C. *dryophilus*, F. 124, Syn. Car. 669 (omphal.).
97. 97. A. C. *oreades*, F. 127, Syn. Car. 652, (collinus) et. Pennsylv.

SUBGEN. 9. COLLYBIA.

98. 98. A. C. *scorodonius*, F. 130, Syn. Car. 671 (alliatus).
99. 99. A. C. *calopus*, F. 130, Syn. Car. 672.
100. 100. A. C. SICCUS, L. v. S., Syn. Car. 677, (mycena) et. Pennsylv.
101. 101. A. C. NIGRIPES, L. v. S., Syn. Car. 678, (myc.) et. Pennsylv.
102. 102. A. C. *esculentus*, F. 131, Syn. Car. 693, et. Pennsylv.
103. 103. A. C. *tenacellus*, F. 131, Syn. Car. 692.
104. 104. A. C. *tuberosus*, F. 133, Syn. Car. 674, et. Pennsylv.
105. 105. A. C. *ramealis*, F. 135, Syn. Car. 675, et. Pennsylv.
106. 106. A. C. *rotula*, F. 136, Syn. Car. 787, freq. Pennsylv.
107. 107. A. C. *androsacea*, F. 137, Syn. Car. 788, freq. et. Pennsylv.
*108. 108. A. C. *stipitarius*, F. 138, ramulis dejectis et defossis, subgregarie increscit Bethlehem.

*109. 109. A. C. *perforans*, F. 138, Salem et Bethlehem.
110 110. A. C. *epiphyllus*, F. 139, Syn. Car. 789, et Pennsylv.

Subgen. 10. MYCENA.

111. 111. A. M. *alliaceus*, F. 140, Syn. Car. 676, et. Pennsylv.
112. 112. A. M. *amictus*, F. 141, Syn. Car. 681 (atroalbus).
*113. 113. A. M. *filopes*, F. 142, Bethlehem, (pilosus Pers.)
114. 114. A. M. *alcalinus*, F. 142, Syn. Car. 684, (leptocephalus).
115. 115. A. M. *galericulatus*, F. 143, Syn. Car. 679, et. Pennsylv.
116. 116. A. M. *polygrammus*, F. 146, Syn. Car. 680.
117. 117. A. M. *galopus*, F. 148, Syn. Car. 682.
118. 118. A. M. *haematopus*, F. 149, Syn. Car. 683.
119. 119. A. M. *elegans*, F. 149, Syn. Car. 695.
120. 120. A. M. *purus*, F. 151, Syn. Car. 639.
121. 121. A. M. *adonis*, F. 152, Syn. Car. 696.
122. 122. A. M. *lineatus*, F. 152, Syn. Car. 687.
123. 123. A. M. *lacteus*, F. 152, Syn. Car. 698, et. Pennsylv.
124. 124. A. M. *stylobates*, F. 153, Syn. Car. 694.
125. 125. A. M. *epipterygius*, F. 155, Syn. Car. 686, et. Pennsylv.
126. 126. A. M. *citrinellus*, F. 155, Syn. Car. 688, et. Pennsylv.
127. 127. A. M. *vulgaris*, F. 156, Syn. Car. 699, et. Pennsylv.
128. 128. A. M. setisedus, L. v. S., Syn. Car. 779 (Omphal.).
129. 129. A. M. *corticola*, F. 159, Syn. Car. 700, et. Pennsylv.
130. 130. A. M. *integrellus*, F. 161, Syn. Car. 697, et Pennsylv.

Subgen. 11. OMPHALIA.

131. 131. A. O. *fibula*, F. 165, Syn. Car. 792, et. Pennsylv.
132. 132. A. O. *ericetorum*, F. 165, Syn. Car. 793, et. Pennsylv.
133. 133. A. O. *campanella*, F. 166, Syn. Car. 790, et. Pennsylv.
134. 134. A. O. *muscorum*, F. 167, Syn. Car. 791, et. Pennsylv.
135. 135. A. O. *chrysoleucus*, F. 167, Syn. Car. 775.
136. 136. A. O. *atratus*, F. 168, Syn. Car. 785 (nigrella).
137. 137. A. O. *epichysium*, F. 169, Syn. Car. 784, et. Pennsylv.
138. 138. A. O. *fragrans*, F. 171, Syn. Car. 771.
139. 139. A. O. *expullens*, F. 172, Syn. Car. 783.
140. 140. A. O. *cyathiformis*, F. 173, Syn. Car. 782 (tardus).

Subgen. 12. PLEUROTUS.

141. 141. A. P. *dryinus*, F. 180, Syn. Car. 803, freq. Pennsylv.
142. 142. A. P. *glandulosus*, F. 182, Syn. Car. 801, et. Pennsylv.
143. 143. A. P. *astreatus*, F. 182, Syn. Car. 802, et. Bethlehem.
144. 144. A. P. *salignus*, F. 183, Syn. Car. 803, et. Bethlehem.
145. 145. A. P. *conchatus*, F. 181, Syn. Car. 797. Vide Suppl. Friesii, Elenchus, p. 23. Freq. etiam Bethlehem. Huc etiam A. *inconstans*, F. 181, n. 5.
146. 146. A. P. tubaeformis, L. v. S., Syn. Car. 799.
147. 147. A. P. *petaloides*, F. 183, Syn. Car. 807 (spathulatus).
*148. 148. A. P. *lamellirugus*, F. 184, Bethlehem.
149. 149. A. P. *ulmarius*, F. 186, Syn. Car. 795, Bethlehem.
150. 150. A. P. *tessellatus*, F. 186, Syn. Car. 796.
151. 151. A. P. *serotinus*, F. 187, Syn. Car. 905, Bethl. freq.
152. 152. A. P. *stypticus*, F. 188, Syn. Car. 811, et. Beth.
153. 153. A. P. *nidulans*, F. 189, Syn. Car. 812, et. Beth.
*154. 154. A. P. *algidus*, F. 190, Bethlehem in betulis.
155. 155. A. P. pectinatus, L. v. S., F. Suppl. Eleneh. p. 24, Syn. Car. 814, etiam Beth.

*156. 156. A. P. *tremulus*, F. 191, Bethlehem.
157. 157. A. P. *rigens*, β *tenuissimus*, Syn. Car. 813, Suppl. Elench. F. p. 26, T.
*158. 158. A. P. *farinaceus*, F. 188, Beth.
159. 159. A. P. *applicatus*, F. 192, Syn. Car. 816, epigaeus.
160. 160. A. P. *striatulus*, F. 193, Syn. Car. 818, Beth.
*161. 161. A. P. LAMELLOSUS, L. v. S., passim ad ligna et cortices, Beth.
A.
162. 162. A. P. NIGER, L. v. S., Syn. Car. 817, F. Suppl. Elench. 26.

β *Ser. Hyporhodii.*

SUBGEN. 13. MOUCERON.

163. 163. A. M. *prunulus*, F. 193, Syn. Car. 777, et. Beth.

SUBGEN. 14. CLITOPILUS.

164. 164. A. C. *adstringens*, F. 195, Syn. Car. 651.
165. 165. A. C. *sericellus*, F. 196, Syn. Car. 665.
166. 166. A. C. *fertilis*, F. 197, Syn. Car. 631.
167. 167. A. C. *leoninus*, F. 199, Syn. Car. 638.
168. 168. A. C. *pluteus*, F. 199, Syn. Car. 654, et. Beth.
169. 169. A. C. *nonus*, F. 200, Syn. Car. 655.

SUBGEN. 15. LEPTONIA, ET 16. NOLANEA.

170. 170. A. L. *chalybaeus*, F. 205, Syn. Car. 645, et. Beth.
*171. 171. A. L. *serrulatus*, F. 204, non in Synop. tamen Salem.
172. 172. A. L. *pascuus*, F. 205, Syn. Car. 729, et. Beth.

γ *Cortimariae.*

SUBGEN. 18. TELAMONIA.

173. 173. A. T. *flexipes*, F. 212, Syn. Car. 570, Lepiota.
174. 174. A. T. *gentilis*, F. 212, Syn. Car. 569, Lep. helvola.
175. 175. A. T. *macropus*, F. 215, Syn. Car. 571, Lep.
176. 176. A. T. *bivelus*, F. 215, Syn. Car. 593, Cort. fulgens.

SUBGEN. 19. INOLOMA.

177. 177. A. I. *violaceus*, F. 217, Syn. Car. 574, et. Beth.
178. 178. A. I. *violaceo-cinereus*, F. 217, Syn. 575, et. Beth.
179. 179. A. I. *argentatus*, F. 218, Syn. Car. 588.
180. 180. A. I. *albo-violaceus*, F. 218, Syn. Car. 587 et: Beth.
181. 181. A. I. *conopus*, F. 219, Syn. Car. 586.
182. 182. A. I. *pholideus*, F. 219, Syn. Car. 584 (lepidomyces).
183. 183. A. I. *anomalus*, F. 220, Syn. Car. 644 (Gym. eumorph.).
184. 184. A. I. *subtortus*, F. 222, Syn. Car. 582, Pennsylv.
185. 185. A. I. *infractus*, F. 223, Syn. Car. 581, Pennsylv.
186. 186. A. I. *scaurus*, F. 223, Syn. Car. 583 (fulvofulig.).
187. 187. A. I. *rufo-olivaceus*, F. 223, Syn. Car. 585, Pennsylv.
188. 188. A. I. *calluchrous*, F. 224, Syn. Car. 579 et 580, decolorans.
189. 189. A. I. *glaucopus*, F. 224, Syn. Car. 578.
190. 190. A. I. *turbinatus*, F. 225, Syn. Car. 592.

SUBGEN. 21. DERMOCYBE.

191. 191. A. D. *cinnamomeus*, F. 229, Syn. Car. 597, et. Beth.
192. 192. A. D. *croceus*, an. var. Syn. Car. 598, et. Beth.
193. 193. A. D. *hemitrichus*, F. 230, Syn. Car. 596.
194. 194. A. D. *iliopodius*, F. 231, Syn. Car. 628 (dulcamarus).
195. 195. A. D. *acutus*, F. 233, Syn. Car. 615, Bethl.
196. 196. A. D. *ochroleucus*, F. 234, Syn. Car. 595, et. Bethl.
197. 197. A D. *armeniacus*, F. 234, Syn. Car. 601, et. Bethl.
198. 198. A. D. *castaneus*, F. 235, Syn. Car. 599, et. Bethl.
199. 199. A. D. *decipiens*, F. 236, Syn. Car. 600, et. Pennsylv.
200. 200. A. D. *decumbens*, F. 237, Syn. Car. 589.
201. 201. A. D. *semiglobatus*, F. 237, Syn. Car. 623.
202. 202. A. D. *croceo-caeruleus*, F. 238, Syn. Car. 643 (Gym.).
203. 203. A. D. *picreus*, F. 239, Syn. Car. 614.
204. 204. A. D. DENTICULATUS, L. v. S., Syn. Car. 603.

δ *Dermini.*

SUBGEN. 22. PHOLIOTA.

205. 205. A. P. *aureus*, F. 241, Syn. Car. 565, Lepiota.
206. 206. A. P. *aurivellus*, F. 242, Syn. Car. 564.
207. 207. A. P. *squarrosus*, F. 243, Syn. Car. 563.
208. 208. A. P. *tubereulosus*, F. 244, Syn. Car. 611 (curvipes).
209. 209. A. P. *mutabilis*, F. 245, Syn. Car. 567, caudicinus, freq. etiam Pennsylv.

SUBGEN. 23. MYXACIUM.

210. 210. A. P. *collinitus*, F. 248, Syn. Car. 577.

SUBGEN. 24. HEBEOLOMA.

211. 211. A. H. *fastibilis*, F. 249, Syn. Car. 630, et. Pennsylv.

SUBGEN. 25. FLAMMULA.

212. 212. A. F. *flavidus*, F. 250, Syn. Car. 594 (Cort.).
213. 213. A. F. *spumosus*, F. 252, Syn. Car. 726, (Pras. silacea) etiam Pennsylvania sero autumno.
214. 214. A. F. *maculosus*, F. 253, Syn. Car. 669 (Gym.).
215. 215. A. F. *lentus*, F. 253, Syn. Car. 590.
216. 216. A. F. *cohaerens*, F. 253, Syn. Car. 606.

SUBGEN. 26. INOCYBE.

217. 217. A. I. *rimosus*, F. 258, Syn. Car. 610, et. Pennsylv.
218. 218. A. I. *geophyllus*, F. 258, Syn. Car. 642 et 670.
219. 219. A. I. *scabellus*, F. 259, Syn. Car. 673.

SUBGEN. 27. NAUCORIA.

220. 220. A. N. *conspersus*, F. 260, Syn. Car. 617.
221. 221. A. N. *pumilus*, F. 263, Syn. Car. 616.

SUBGEN. 28. GALERA.

222. 222. A. G. *tener*, F. 265, Syn. Car. 691, et. Bethl.
223. 223. A. G. *hypnorum*, F. 267, Syn. Car. 690, et. Bethl.

Subgen. 29. TAPINIA.

224. 224. A. T. *involutus*, F. 271, Syn. Car. 763.

Subgen. 30. CREPIDOTUS.

*225. 225. A. C. *atro-tomentosus*, F. 273, Salem et Bethl.
226. 226. A. C. *mollis*, F. 274, Syn. Car. 810, et. Bethl.
227. 227. A. C. *planus porrigens*, Syn. Car. 809.
228. 228. A. C. *variabilis*, F. 275, Syn. Car. 815.
229. 229. A. C. *depluens*, F. 275, Syn. Car. 816 (epigaeus).
*230. 230. A. C. *violaceo-fulvus*, F. 276, Bethlehem.
*231. 231. A. C. *byssisedus*, F. 276, Bethlehem.

§ *Pratellae.*

Subgen. 31. VOLVARIA.

232. 232. A. V. *bombycinus*, F. 277, Syn. Car. 540. Amanita incarnata.
233. 233. A. V. *volvaceus*, F. 278, Syn. Car. 541. Am. virgata.
*234. 234. A. V. *speciosus*, F. 278, Syn. Car. caret Salem.
235. 235. A. V. *pusilla*, F. 278, Syn. Car. Am. pusilla, 542.

Subgen. 31, *b.* VAGINATA.

236. 236. A. V. *cepaestipes*, F. 279, Syn. Car. 718.

Subgen. 32. PSALLIOTA.

237. 237. A. P. *campestris*, F. 281, Syn. Car. 719 et 720, et. Pennsylv.
238. 238. A. P. *praecox*, F. 282, Syn. Car. 725, et. Pennsylv.
239. 239. A. P. *semiglobatus*, F. 284, Syn. Car. 710, Coprin et. Pennsylv.
240. 240. A. P. *echinatus*, F. 286, Syn. Car. 721.
241. 241. A. P. *aeruginosus*, F. 286, Syn. Car. 722.

Subgen. 33. HYPHOLOMA.

242. 242. A. H. *lateritius*, F. 288, Syn. Car. 724, freq. Pennsylv.
243. 243. A. H. *fascicularis*, F. 288, Syn. Car. 725, et. Pennsylv.

Subgen. 34. PSILOCYBE.

244. 244. A. P. *ericaceus*, F. 291, Syn. Car. 715 et 716, etiam Pennsylvania.
245. 245. A. P. *montanus*, F. 293, Syn. Car. 731, et. Pennsylv.
246. 246. A. P. *foenisicii*, F. 295, Syn. Car. 713, et. Pennsylv.

Subgen. 35. PSATHYRA.

247. 247. A. P. *stipatus*, F. 296, Syn. Car. 727, et. Pennsylv.
248. 248. A. P. *caesius*, Syn. Car. 730.

Subgen. 36. COPRINARIUS.

249. 249. A. C. *semiovatus*, F. 300, Syn. Car. 711, et. Penns.
250. 250. A. C. *papilionaceus*, F. 301, Syn. Car. 712, et. Penns.
251. 251. A. C. *fimicola*, F. 301, Syn. Car. 714, et. Penns.
252. 252. A. C. *vitellinus*, F. 303, Syn. Car. 704.
253. 253. A. C. *titubans*, F. 304, Syn. Car. 717.
254. 254. A. C. *conocephalus*, F. 304, Syn. Car. 728.
255. 255. A. C. *disseminatus*, F. 305, Syn. Car. 705, et. Pennsylv.

Subgen. 37. GOMPHUS.

256. 256. A. G. rhodoxanthus, L. v. S., Syn. Car. 640.

B. *Coprinus.*

257. 257. A. C. *comatus*, F. 307, Syn. Car. 701.
*258. 258. A. C. *atramentarius*, F. 308. Philadelphia, frequens in Washington Square, ubi primum observatus a D. Coxe, qui experimentis curiosis ex fungo deliquescente atramentum confecit valde indestructibile. Mense Octobr.
259. 259. A. C. *micaceus*, F. 309, Syn. Car. 703 (ferrug.).
260. 260. A. C. *cinereus*, F. 310, Syn. Car. 702, et. Pennsylv.*
*261. 261. A. C. *nivcus*, F. 311, rarius Pennsylvania obvius.
262. 262. A. C. *domesticus*, F. 311, Syn. Car. 706, et. Bethl.
263. 263. A. C. *plicatilis*, F. 312, Syn. Car. 707, (pulcher) et. Pennsylv.
*264. 264. A. C. *ephemeroides*, F. 313. Rar. Bethl.
265. 265. A. C. *ephemerus*, F. 313, Syn. Car. 708, freq. et. Bethl.
266. 266. A. C. *radiatus*, F. 313, Syn. Car. 709, et. Bethlehem.

Genus 2. Favolus.

267. 1. F. *alveolarius*, Fr. Polyp. p. 343, Syn. Car. 876, sub Boleto arculario. Bene distinctus.
*268. 2. F. abnormis, L. v. S., an novum Genus ? Rarissime occurrit in cortice castaneo: hic fungus abnormis, Bethlehem—quasi Favolum resupinatum in miniatura referens.
F. membranaceus, subfragilis, omnino resupinatus, unciali longitudine ac semiunciali latitudine ; subseparabilis, superficie fusca, poris quasi magnis pro ratione, exacte hexagonis, favum referentibus vix excavatis concoloribus, obsita, nitente.

Genus 3. Lentinus. Fr. Syst. Orb. Veg. pag. 77.

a. Mesopodes.

269. 1. L. Schweinitzii, L. v. S., Syn. Car. 603, A. *denticulat.* Supp. Elench. Fr. p. 46.
270. 2. L. Lecomtei, L. v. S., Syn. Car. 794, A. *crinitus*, e Georgia, Suppl. Elench. F. p. 47.
271. 3. L. strigosus, L. v. S., Syn. Car. 800, Elench. F. 47.
272. 4. L. *tigrinus*, F. 176, Syn. Car. 778, Agaric.
273. 5. L. *lepideus*, F. 176, Syn. Car. 798, A. tessulatus.
274. 6. L. *cochleatus*, β dentatus, F. 177, Syn. Car. 766, frequentissimus Pennsylvania in viis publicis ex pineis palis constructis, ac in Pocono, mense Augusto, vigens maxime tempore sicco. Saepe 6—7 unciali pileo ; stipite brevi tenacissimo.

b. Pleurotes.

*275. 7. L. *chama*, F. 181, Carolin. in querc. Non in Syn.
276. 8. L. *flabelliformis*, F. 185, Syn. Car. 806.
277. 9. L. pelliculosus, L. v. S., Syn. Car. 808, et in Elench. F. pag. 47, Agaricus.

Genus 4. Cantharellus.

Trib. 1. Mesopus.

278. 1. C. *aurantiacus*, Fr. n. 2, Syn. Car. 826, non in Pennsylv.
279. 2. C. *cibarius*, F. n. 3, Syn. Car. 825, rarius etiam Pennsylv.
280. 3. C. *tubaeformis*, F. n. 7, Syn. Car. 828, etiam Bethl.
281. 4. C. *lutescens*, F. n. 8, Syn. Car. 827, freq. Pennsylv.
282. 5. C. *cinereus*, F. n. 9, Syn. Car. 829, rarior etiam Bethl.
283. 6. C. *cornucopioides*, F. n. 10, Syn. Car. 830, freq. Bethl.
284. 7. C. odoratus, Syn. Car. 832, Elench. F. p. 51, solummodo in Car.

285. 8. C. roseus, L. v. S., Syn. Car. 833, Elench. F. p. 53, in Carol. exclus.

286. 9. C. cinnabarinus, L. v. S., Syn. Car. 641, sub Agarico, vulgaris in Pennsylv. praesertim in Kalmetis et omnino ad hoc genus pertinens.

*287. 10. C. floccosus, L. v. S., sylvis vastis faginis, "Beech Woods" dictis, in monte Pocono, Pennsylvania.

C. magnus, altitudine sexunciali, gregarius, tubaeformis, substantia subcarnoso-suberosa. *Pileo* infundibuliformi excavato, ime in stipitem; superficie floccoso-squamulosa, lutescente, 2—3 uncias lato, margine inflexo, undulato, repando. *Plicis* ramoso-furcatis densis, decurrentibus in stipitem cavum compressum, concoloribus. *Stipite* versus basin abiente in radicem subhorizontalem indurescentem. Pondus totius fungi laevissimus pro magnitudine. Dantur specimina in quibus *Pilei* bini aut plurimi ex eodem stipite, inde subramoso, proveniunt.

*288. 11. C. helosioides, L. v. S., in ramulis dejectis putridis rarissime, Salem, Carol.

C. minutissimus, 2 lin. vix excedens. *Stipite* gracili, glabro, fuseo. *Pileo* pulvinato, subcarnoso, demum indurato, spadiceo, glabro, ½ lin. lato. *Plicis* plerumque quatuor simplicibus, radiatim decurrentibus, lutescentibus; stipite concolori.

An ad genus Persoonii in Myc. Europ. *Perona?*

Trib. 2. Pleuropus et Apus.

289. 12. C. *crispus*, F. p. 323, n. 2, Syn. Car. 837, etiam ex New York, misit cel. Torrey.

290. 13. C. incarnatus, L. v. S., Syn. Car. 840. Vulgaris, Salem, in truncis dejectis, nunquam in Pennsylv. obvius. Fries. in Elench. p. 57, n. 1, perperam ad Merulium.

291. 14. C. confluens, L. v. S., Syn. Car. 836, *crispo* satis affinis. Et in Pennsylvania occurrit, nec ad Merulium pertinet ut habet Fries. in Elench. p. 57, n. 2.

292. 15. C. spathularia, L. v. S., Syn. Car. 839, ubi depictus, fig. 1 et 2. Etiam ex Tropicis, Surinam.

293. 16. C. cupressi, L. v. S., Syn. Car. 835, ex Georgia.

294. 17. C. *muscigenus*, F. n. 3, Syn. Car. 834.

*295. 18. C. *fissilis*, F. n. 8, Bethlehem.

*296. 19. C. *muscorum*, F. n. 10, Carol. non inventus, sed ex missis amicissimi Torrey in muscis, New York.

*297. 20. C. *tenellus*, F. n. 11, ad trabes putrid., Bethl.

*298. 21. C. *cupularis*, F. n. 12, rarius Bethlehem in stipitibus herbarum. Perizam refert disco subplicato fuligineo-badio.

*299. 22. fasciculatus, L. v. S., ex New York communicavit amicissimus Torrey, in cortice ignoto proveniens.

C. fasciculatim proveniens, minutus, caespites 4 lineares latitudine, 2—3 altitudine efficiens. Fungus stipitatus, vertice porrecto, referens *Perizam anomalam*; stipitibus fasciculi, quasi in basin latiusculam coalitis—in cupulam campanulatam valde fissilem elongatis (extus colore cervino) furfuraceam. *Plicis* in cupula indistinctis, statu sicco ob clausam cupulam non observandis, colore lutescentibus. Stipitibus porrectis, basi albo-tomentosis.

*300. 23. C. olivaceus, L. v. S., rarissime obvius. Salem, Carolinae, in terra ad vias.

C. Pleuropus. Pileo 1—1½ unciali, subcarnoso-suberoso, dimidiato, pulvinato, repando, margine subinflexo, subtomentoso, centro impresso; in stipitem crassum, brevissimum, nigrum, lateralem, strigosulum porrecto. Pileo olivaceo, quasi Boleti cujusdam subtomentosi. Plicis luteis, anastomosantibus, dense intertextis, in hymenio carnoso.

*301. 24. C. viridis, L. v. S., in ligno putrido rarus et satis abnormis. An sit Periza ex vicinitate Phialearum? Bethlehem.

C. substipitatus, dimidiatus aut irregularis, ¼ unciam non magnitudine excedens, gregarius, substantia firma quasi elastica. Cupulis demum subcorncis, obconicis, virescenti-fuscis, extus e stipite plicatis. Disco ime excavato aut interdum applanato, vivide virente 4 lin. lat. In explicatissimis, pileus quasi repando undulatus, in aliis contractus.

Genus 5. Schizophyllum.

302. 1. S. *commune*, F. p. 330, n. 1, Syn. Car. 819, Agaricus alneus.
Vulgatissimus ut in Carolina etiam in Pennsylv. in truncis fere omnibus, ex cortice ac ligno. Nunquam autem pinis increscens.

Subordo II. POLYPOREI.

Genus 6. Boletus.

303. 1. B. *luteus*, F. p. 386, n. 1, Syn. Car. 854 (annulatus), et. Bethlehem, pinetis r. c. Pocono.
*304. 2. B. *flavidus*, F. n. 2, ad margines paludum Pocono.
305. 3. B. *granulatus*, F. 3, Syn. Car. 858 (circinans), et. Pennsylv.
*306. 4. B. *bovinus*, F. 4, vulgatus Pennsylv. et Carol.
307. 5. B. *piperatus*, F. 5, Syn. Car. 861, etiam Bethl.
308. 6. B. *variegatus*, F. 6, Syn. Car. 862 (reticulatus), rarior.
309. 7. B. *subtomentosus*, F. 10, Syn. Car. 859, et. Pennsylv.
310. 8. B. *calopus*, F. 11, Syn. Car. 870, et. Pennsylv.
311. 9. B. *luridus*, F. 13, Syn. Car. 868, et. Bethl. et 869.
312. 10. B. *castaneus*, F. 14, Syn. Car. 866, et. Bethl.
313. 11. B. *edulis*, F. 15, Syn. Car. 867, rarior et. Pennsylv.
314. 12. B. Pocono, L. v. S., in sylvis montosis Pocono fagineis.
B. minor, 2—3 uncias altus. Pileo pulvinato, unciali tantum, minutim strigoso-subtomentoso margine, arcte inflexo, cervino. Poris majusculis, angulato-prominulis, concoloribus. Stipite 2—3 unciali, subattenuato, basin versus incrassato, apice pallido-striato, ceterum spadiceo, subfurfuraceo.
315. 13. B. *floccopus*, F. 17, Syn. Car. 863, *floccosus*, L. v. S., frequens Bethl. ad vias umbrosas, r. c. Bartow's spring.
316. 14. B. *scaber*, F. 18, Syn. Car. 857, non freq.
317. 15. B. *felleus*, F. 19, Syn. Car. 865, et. Pennsylv.
318. 16. B. betula, L. v. S., Syn. Car. 860, frequens etiam Bethlehem in sylvis.
319. 17. B. alboater, L. v. S., an Muhlenberg, Syn. Car. 864, etiam Bethlehem.

Genus 7. Polyporus.

Trib. 1. Mesopus.

α Subcarnosi.

320. 1. P. *subsquamosus*, F. p. 435, n. 1, β leucomelas, Syn. Car. 871. Nondum Pennsylv.
321. 2. P. *ovinus*, F. n. 2, Syn. Car. 872 (albidus), Syn. Car. 872, in Pilota.
*322. 3. P. *melanopus*, F. n. 4, Bethlehem ad trunc.
323. 4. P. *fuliginosus*, F. 5, Syn. Car. 873, et. Bethl.
324. 5. P. *brumalis*, F. 6, Syn. Car. 874, et. Bethl. rarior.
*325. 6. P. *ciliatus*, F. 7, pileo minuto, Salem inv.
326. 7. P. *leptocephalus*, F. 8, Salem et Bethlehem passim.

β Coriacei.

327. 8. P. *perennis*, F. p. 350, n. 13, Syn. Car. 875, et. Bethl. freq.
*328. 9. P. *rufescens*, F. n. 14, rarius obvius Salem.
329. 10. P. *Schweinitzii*, F. n. 16, Syn. Car. 878, *sistotremoides*. Specimina pulchra inveni Bartrami Horto Philadelphia.
*330. 11. P. connatus, L. v. S. P. cinnamomeus, Pers. p. 41, pessime descriptus, huc pertinet. Salem rarior.

P. pileis coriaceis, velutinis, saepe multis in unum connatis, ex cinnamomeo albidis, centro umbilicatis, limbo repando, eleganter zonatis. Poris magnis cinnamomeis, laceratis ; hinc valde differt ab *perenni*. Stipitibus ½-uncialibus, compressis, ligneo-suberosis, cinnamomeis, basi tuberosis. Pileis singulis diametro unciali, sed ad octo confluunt.

*331. 12. P. RADICATUS, L. v. S., melius ad priorem sectionem forsan. In terra lignosa juxta truncos, Bethlehem. Substantia ambit inter 2 sect.

P. solitarius ; radice longa, fusiformi, suberosa, nigra, ad 1—2 uncias penetrans, terram lignosam ex truncis corruptis ortam. Stipite cylindrico unciali in Hymenium obconicum dilatato, minutim squamuloso, albido. Hymenio ex poris ovatis majusculis, parietibus tuborum crassiusculis, non profundis regulariter dispositis, constante. Pileo pulvinatim applanato, marginibus inflexis, centro impresso, fuligineo-pallido, minutim subtomentoso ; diametro 1½ unciali.

Trib. 2. PLEUROPUS.

332. 13. P. *varius*, F. p. 352, n. 1, Syn. Car. 884, freq. et. Bethl.

333. 14. P. *badius*, Pers. certissime specie distinctus, Syn. Car. 883 et 877, *numularius* frequens aeque ac prior etiam Bethlehem.

334. 15. P. *lucidus*, F. 353, n. 2, Syn. Car. 882, freq. et maximus et Bethlehem. Valde varians. Junior saepe clavatus et abnormis.

Trib. 3. MERISMA.

*335. 16. P. *umbellatus*, F. p. 354, n. 1, prope *Quakertown*.

336. 17. P. *frondosus*, F. n. 2, Syn. Car. 879, et. Pennsylvania.

337. 18. P. *giganteus*, F. n. 4, etiam passim Pennsylvania, 880.

338. 19. P. *cristatus*, F. n. 5. Syn. Car. 881, etiam Pocono.

339. 20. P. *sulphureus*, F. n. 6, Syn. Car. 885 et 886, *citrinus* et *croceus*. Freq. Bethl. ingentibus speciminibus, ad radices et in mediis truncis. Observatur saepe ut statu exsoleto splendet nocte luce phosphoreo.

*340. 21. P. *intricatus*, F. 7, ramosus, Bethl. rarius sed distinct.

341. 22. P. GRAVEOLENS, L. v. S., Syn. Car. 901, Elench. F. p. 79, et Pennsylvan. Nazareth, sed rarior. Semper medio arboris trunco increscit durissimus ac difficiliter separandus.

Trib. 4. APUS.

α Autumnales.

342. 23. P. *hispidus*, F. p. 362, n. 1, Syn. Car. 891, et. Bethlehem, saepe maximus.

343. 24. P. LABYRINTHICUS, L. v. S., Syn. Car. 950, Sistotrema spongiosum, vide Elench. Fries. p. 83.

*344. 25. P. *spumeus*, F. p. 358, n. 2. *Pine swamp* inventus : colore subspadiceo, a fungo Friesii differt.

β Annui.

† *Carnosi.*

*345. 26. P. *betulinus*, F. 358, n. 1, rarissime nobis, Beechwoods, (vix Carolina) et New York missus (ad Sectionem sequentem).

*346. 27. P. *chionaeus*, F. 359, n. 3, olim P. spongiosus, L. v. S., passim Bethlehem.

347. 28. P. *destructor*, F. 359, n. 4, Syn. Car. 920, ad rad. trunc.

*348. 29. P. *lacteus*, F. 359, n. 5, vix pubescit pileus in nostro; Bethlehem rarius.

349. 30. P. *stipticus*, F. 359, n. 6, Syn. Car. 888, et. Bethlehem.

350. 31. P. *mollis*, F. 360, n. 7, Syn. Car. 890, et. Bethlehem.

351. 32. P. *caesius*, F. 360, n. 8, Syn. Car. 889, et. Bethlehem.

*352. 33. P. *fragilis*, F. Elench. p. 86, Stumpstown, Pennsylv.

*353. 34. P. *tephroleucus*, F. p. 360, n. 9, Bethlehem rarus.

*354. 35. P. *alutaceus*, F. p. 360, n. 10, Bethlehem distinctis.

*355. 36. P. FIMBRIPORUS, L. v. S., in ramis dejectis tenuioribus castaneis, Bethl.

P. subtriangularis, substantia carnosa, aquose spongiosa, omnino P. *mollis*. Pileo glabro, pallido,

siccitate ruguloso et contracto volumine. Poris albescentibus, rotundis, minutis, circum apices mire fimbriato ciliatis. Diametro unciali. Tempore sicco indurescit.

†† *Subcarnosi.*

*356. 37. P. *pubescens*, F. p. 367, n. 8, Bethlehem rarus, olim P. *caespitulans* mihi.
357. 38. P. *fumosus*, F. p. 367, Syn. Car. 901, Salem.
351. 39. P. UNDULATUS, L. v. S., Syn. Car. 893, Elench. F. p. 87.
359. 40. P. ISABELLINUS, L. v. S., Syn. Car. 899, Elench. p. 88.
*360. 41. P. NIGROPURPURASCENS, L. v. S., rarius in Carolina obvius, non Poria 925, quanquam specimina sub hoc nomine a me Friesio communicata huc pertinent.
P. pileis dense imbricatis, dimidiatis, albo strigoso-tomentosis, vix fasciatis, nisi in margine tenui flexuoso ferrugineo. Poris minutis subflexuosis et fusco nigro purpurascentibus. Fasciculis similibus P. *adusto* et *amorpho*, quibus affinis provenit.
*361. 42. P. *amorphus*, (Pers. aureolus) F. n. 8, Salem et Bethl.
362. 43. P. *adustus*, F. n. 6, Syn. Car. 898, et. Bethl. freq.
363. 44. P. *crispus*, F. n. 5, Syn. Car. 900, et. Bethl.

††† *Subsuberosi.*

*364. 45. P. *ulmarius*, F. p. 365, n. 2. *Lancaster*, rip. Conestogae in trunco ulmi.
*365. 46. P. *suavcolens*, F. 366, n. 5, rarissimus. Specimina optima ex New York misit Torrey.
*366. 47. P. *populinus*, F. 367, n. 6, in trunco mali Bethl.
367. 48. P. UNICOLOR, L. v. S., Syn. Car. solitarius semper—distinctissimus, etiam passim in Pennsylvania, in medio trunco.
368. 49. P. CERVINUS, L. v. S., Syn. Car. 902, Elench. Fr. p. 92, solummodo in Carolina observavi.
369. 50. P. *serialis*, F. p. 370, Syn. Car. 927, *contiguus* freq. et. Bethlehem.
*370. 51. P. PILOTAE, L. v. S., maximus in monte Pilota Carol. in trunco castaneo.
P. pileo maximo, pedali fere dimidiato, subradicato, i. e., uno latere ime intrante lignum, substantia sua suberoso-fibrillosa, demum indurata. Ceterum superficie pilei superna nec tomentosa, nec strigosa, potius rugosa, scariosa et subresinosa. Tubis longissimis, discretis, arcte invicem adpressis, luce obversis subdiaphanis, atrofuscis aut brunneis succulentis. Poris minutulis angulatis, succo resinoso repletis. Plusquam 4 uncias crassus. Substantia fibroso-suberosa, interne subrutilans.
*371. 52. P. PALLIDO-CERVINUS, L. v. S. rarius obvius, *Hamburg*, Berks County, non valde distinctus.
P. minor, dimidiatus uncialis. Pileo gilvo cervino, glabro—substantia subcarnosa. Poris pallidis flexuosis tubis longiusculis. Potius ad sectionem carnosorum in vicinitate, *mollis*, sed colore valde distinctus.

†††† *Coriacei.*

*372. 53. P. *hirsutus*, F. 367, n. 1, non rarus Bethlehem, in ramis Robiniae praesertim.
*373. 54. P. *hirsutulus*, L. v. S., rarus Bethlehem—ad Setosas Friesii, p. 861 in nota, pertinere videtur.
P. minutus, dimidiatus aut reniformis, subinfundibuliformis etiam; substipitatus, coriaceus, ½ unicialis. Pileo strigoso-canescente griseo, fasciis notato ex pilis setosis, fuligineo-nigris, aggregatis in centro et in margine inflexo, inde ciliato. Poris pallidis subdecurrentibus.
374. 55. P. *velutinus*, F. p. 368, n. 2, vulgatissimus etiam in Pennsylvania et saepe maximus.
375. 56. P. NIGROMARGINATUS, L. v. S., Syn. Car. 912, videtur satis distinctus ab affini priori et in Pennsylvania semper in Liriodendro invenitur.
376. 57. P. *zonatus*, F. 368, n. 2, Syn. Car. 913, *ochraceus*, etiam Bethlehem.
377. 58. P. *versicolor*, F. n. 3, Syn. Car. 915. Ubique.
*378. 59. P. *stereoides*, F. 369, n. 5, rarius in Pocono, affinis P. *abietino.*
*379. 60. P. *radiatus*, F. n. 6, interdum substipitatus. Salem et Bethlehem occurrit.
*380. 61. P. *pallescens*, F. n. 7. Salem (Syn. Car. 913, *lutescens*), et. Bethlehem.
*381. 62. P. ABIETINUS, F. 370, Syn. Car. (Sistotrema violaceum, 949) omnium frequentissimus ad truncos frondosarum, aeque ac alnorum. Bethl. et Sal.
382. 63. P. VIRGINEUS, L. v. S., Syn. Car. 919, cum Icone, pulcher ac rarus, etiam Pennsylv., Elench. F. p 96.
383. 64. P. CONCHIFER, L. v. S. Syn. Car. 918, Elench. F. p. 96, etiam Bethlehem rarior.
384. 65. P. SYMPHYTON, L. v. S., Syn. Car. 951, Sistotrema Elenchus, F. p. 97. Solummodo Carolina.

*385. 66. P. DECIPIENS, L. v. S., rarior, obvius in truncis majoribus, Bethlehem.

P. pileis uncialibus, tenuiusculis, coriaceis, imbricatis, albido-griseis, versus basin ochraceis, multifasciatis, velutinis, in fasciis concoloribus, strigoso-pilosis. Fasciis undulato-elevatis. Poris minutis inaequalibus flavo-luteis. Ambit inter P. *versicolorem* et *abietinum*.

*386. 67. P. PARVULUS, L. v. S., rarius in cortice Pinorum. Bethl. Pocono.

P. pileis subresupinato-effusis, tamen undulatim protrusis vix imbricatis, coriaceis, albidis, strigosissimis, semiuncialibus, longitudinaliter confluentibus. Poris pallide ochraceis, majusculis, laceratis, in margine, praesertim in fungo resupinato, obliteratis.

*387. 68. P. SCUTELLATUS, L. v. S., ramis et truncis Syringae vulgaris innascit Bethl. etiam ex New York habeo.

P. minor, unciam vix excedens, plerumque semiuncialis, rarius dimidiatus; plerumque basi affixus et inde omnino scutellatus, orbiculatus, aut subdifformiter ambitu undulato. Pileis durissimis, nigro-fuscis, zonis sulcato-rugosis, plicatis, glabris. Margine hymenioideo, albo subprominente. Hymenio disciformi excavato, quasi albo-pulverulento. Poris minutis rhomboideis, hymenium pertusum apparet, tubis albo-cinereis in centro longiusculis. Demum, pulvere quasi detrito, pori nigrescunt. Substantia subcoriacea duriore ceteris hujus sectionis.

γ *Biennes.*

*388. 69. P. *sanguineus*, F. 371, Syn. Car. caret, sed ibidem specimina elegantissima reperta sunt a me.

389. 70. P. *cinnabarinus*, F. 371, Syn. Car. 916, freq. Pennsylv.

*390. 71. P. *fraxineus*, F. p. 374, saltem Pers. Myc. p. 68, valde distincta species, New York et Bethl.

391. 72. P. AESCULI, L. v. S., Syn. Car. 887, Elench. F. p. 99, Salem rarus.

392. 73. P. *resinosus*, F. 361, Syn. Car. 892, fuscus. Non rarus etiam Pennsylvaniae.

*393. 74. P. *Benzoinus*, F. Elench. p. 100, bene congruit. P. *fuscogilvus*, L. v. S., ad truncum unicum copiose Kreuterville, Pennsylvaniae. Species pulcherrima. Differt a priori subsimili multis notis.

394. 75. P. *odoratus*, F. 373, Syn. Car. 905, in monte Pocono.

395. 76. P. *nidulans*, F. 362, n. 2, prope Kaign's Point, Philad.

396. 77. P. *cuticularis*, F. 363, n. 4, Syn. Car. *alneus* 895, etiam *triqueter* 894, in Robinia, &c.

*397. 78. P. *rutilans*, F. 363, an carpineus, Syn. Car. 896, etiam ex Florida. Tenuitate distinctus.

398. 79. P. GILVUS, L. v. S., Syn. Car. 897, Elench. F. p. 104, frequens etiam Pennsylvania.

ε *Perennes.*

399. 80. P. *marginatus*, F. 372, Salem et Pocono.

*400. 81. P. *pinicola*, F. n. 3, Salem et Pine Swamp freq.

*401. 82. P. *annosus*, F. n. 5, in Betulis, Bethl.

*402. 83. P. *dryadeus*, F. p. 374, freq. ad truncos querneos.

403. 84. P. *fomentarius*, F. n. 8, Syn. Car. 909, vulgaris in frondosis arboribus, Bethl. et Salem.

*404. 85. P. *nigricans*, F. n. 9, aff. priori, ex Florida.

*405. 86. P. *igniarius*, F. n. 10, freq. Bethl. praesertim in Robiniis.

*406. 87. P. *Ribis*, F. n. 11, passim ad antiq. Ribides, Bethlehem.

407. 88. P. *conchatus*, F. 12, Syn. Car. 910, et. Bethl.

*408. 89. P. *microporus*, F. 13, ex Florida excepi a clarissimo Leconte. Plerumque resupinatus.

*409. 90. P. LOBATUS, L. v. S., rarissime in trunco, Salem obvius.

P. irregulariter dimidiatus, postice porrectus, 3—4 unciali diametro, solitarius, vix semiunciali crassitudine, durus. Pileo varie contorto, eleganter lobato; in superficie rugoso, ceterum glabro, pulvere tenui cinnamomeo fusco obtecto. Margine hymenioideo tumido, subrevoluto, tubis brevissimis, inferne obliquis, spadiceis; poris minutis citrinis aut pallescentibus, demum spadiceis.

*410. 91. P. PINI CANADENSIS, L. v. S., an ad *subsuberosos* in truncis Pini canadens. ex Pine Swamp, Mauch Chunk.

P. subsuberosus, fere totus resupinatus, pileo tantum in margine conspicuo, ligno adnatus nec separabilis, indurescens et tum contractus. Pileus ubi liber cervino-gilvus, fibris adpressis subzonatus, ambitu ovato-orbiculari, margine acuto; 4—6 unciali diametro. Tubis longissimis, in ambitu diminutis, margine sterili, fusco-incarnatis intus cinereis. Poris minutis angulosis rubro-incarnatis.

Trib. 5. Resupinatus.

α Poris coloratis.

*411. 92. P. *spongiosus*, F. 1, in cavitate Juglandium, Bethlehem, non Salem. Pers. Myc. Eur. 89, 106.

*412. 93. P. *contiguus*, F. 378, 2, confer. Elench. p. 114, non idem cum P. *seriali*. Rarius ad palos. Bethlehem.

*413. 94. P. favescens, L. v. S., non absimilis P. *megaloporo*, Pers. Myc. Eur. 105, differt colore. Bethlehem rarius in ramis. Favum refert.

P. resupinato-effusus ad pedalem longitudinem, crassus, margine tenui subalbido, determinatim elevato ambitu. Poris latiusculis, hexagonis ; tubis longissimis, pallidis.

414. 95. P. *ferruginosus*, F. 378, n. 3, Syn. Car. 923, Bethlehem.

*415. 96. P. *obliquus*, F. n. 4, Pers. 116, *incrustans*, Sal. et Bethl.

416. 97. P. *salicinus*, F. 376, n. 15, Pers. 109, Syn. Car. 921, ad Salices et Betulas, Salem et Bethl. Semper resupinatus.

*417. 98. P. *subspadiceus*, F. 378, n. 5, Pers. 118, in Fraxino Gnadenth.

*418. 99. P. *spissus*, L. v. S., F. Elench. p. 111, n. 156, non idem cum P. *juglandino*. Satis affinis P. *rufo*, F.

*419. 100. P. *undatus*, Pers. Myc. n. 111, Elench. F. p. 111, in arbore adhuc stante emortuo. Bethl.

*420. 101. P. *Nieskyensis*, Pers. Myc. 115, non ad incarnatum ; passim ad cortices, Bethlehem.

*421. 102. P. *umbrinus*, Pers. Myc. 119, Bethlehem passim vix idem cum *obliquo* nostro.

422. 103. P. Juglandinus, L. v. S., Syn. Car. 926, differt manifestim a P. *spisso*, Elench. F. 111.

423. 104. P. viticola, L. v. S., Elench. F. 115, n. 36, incolit vites emortuas Carolinae, β *papyraceus*, candidus.

424. 105. P. *xanthus*, F. 379, n. 7, Pers. 123, Bethlehem.

*425. 106. P. *nitidus*, F. n. 8, Pers. 122, olim *croceus*, L. v. S., elegantula species. Bethl. in salicibus.

*426. 107. P. pulchellus, L. v. S., rarior Bethlehem, olim *xanthus* mihi ; cortice increscit.

P. resupinato-effusus, superficie inaequali, subplicata, rugosa, ambitu determinatus; margine undulato tumido, substerili. Poris minutis, regularibus, angustatis, tubis subobliquis in rugis superficiei. Totus fungus flavescens, durus, siccus, uncialis.

*427. 108. P. *violaceus*, F. 379, n. 9, rarus Bethlehem.

*428. 109. P. *incarnatus*, F. n. 10, Bethlehem.

429. 110. P. *purpureus*, F. n. 11, Syn. Car. 942, *lilacinus*, var. longe lateque in fabrefactis Bethl.

*430. 111. P. *rhodellus*, F. n. 12, nitidissimus, Bethl.

*431. 112. P. *unitus*, Elench. F. p. 116, Bethl. Nomine P. *crocato*, L. v. S., descriptus.

*432. 113. P. *vitellinus*, Elench. F. 117, Syn. Car. 939, etiam Bethlehem, in putridissimis lignis.

*433. 114. P. *bombycinus*, Elench. F. pag. 117, n. 86, olim nobis *substerilis*, Bethlehem.

*434. 115. P. *sinuosus*, F. 381, n. 18, *versipellis*, Pers. 115, rarius Bethlehem.

*435. 116. P. xantholoma, L. v. S., rarior occurrit Salem ad ligna putrida.

P. effiguratim effusus, tenuissimus, margine membranaceo fimbriato, latiusculo, sterili, eleganter luteo. Poris superficialibus, parietibus crassiusculis, subsinuosis, minutis, pallidis. Plagas 1—2 unciales irregulares efformat, ligni inaequabilitatem forma sequens.

*436. 117. P. Rhododendri, L. v. S., rarior in dejectis Rhododend. maximi truncis, Bethl.

P. longitudinaliter effusus, angustatus. Primum observatur membrana papyracea, detractabilis, albescens aut pallescens, in cujus centro *pori* pauci parum elevati, lati, occurrunt. Demum poris his, tota superficie obsita est, membrana, tantum non in ambitu ubi sublibera et subinflexa. Poris tandem in tubos angulatos, margine fimbriatos, 2—3 lineas altos, ex pallide fuscescentes, elevatis. Totus fungus 1—3 uncias longus, ¼ unc. latus, affinis P. *contiguo*.

*437. 118. P. Sassafras, L. v. S., passim in lignis caric fere consumptis Sassafras, Bethl.

P. substantia molliuscula, bibula; subiculo vix in margine conspicuo; tubis in centro satis elongatis, crassiusculis. Poris minutis, regulariter rotundis. Longitudinaliter in ligno ac cortice effusus (colore pallide lutescente) ad 1—2 uncias.

438. 119. P. superficialis, L. v. S., Syn. Car. 924, Elench. F. pag. 115, 3 β. Friesius amicissimus vix conjunxisset cum P. *viticola*, si vivum vidisset. Et. Pennsylv.

439. 120. P. nigropurpureus, L. v. S., Syn. Car. 925, non rarus et. in Pennsylv. nec cum P. *nigro purpurascenti* nost. Numero 41, nec ad n. 40.

*440. 121. P. CINEREUS, L. v. S., passim Bethlehem ad ramos emollitos Liriod. et Jug.
P. longissime effusus, angustatus, albo-marginatus et effiguratus, margine tenui subfimbriato nec tamen byssino. Tubis obliquis brevioribus, poris angustis, subflexuosis. Longitudine 4—6 unciali, ½—1 unciali latitudine. Totus unicolor, eleganter cinereus.
*441. 122. P. CARYAE, L. v. S., in jacente trunco Caryae albae Nazareth, longissime effusus polymorphus.
P. junior tuberculoso-elevatus, interruptus, substantia spongiosa-tomentosa, margine sterili saepe tumido. Demum late effusus, magis aequabilis et subindurescens, margine tunc tenuissimo, submembranaceo, candido, praeditus. Tubis brevibus, parietibus crassiusculis, poris minoribus subrotundis et subflexuosis; interdum regulariter effusis, interdum pulvinatim in tuberculos elevatis. Ex fuliginis cinerascit. Ad pedalem longitudinem sub trunco effusus.
*442. 123. P. PAPYRACEUS, L. v. S., Syn. Car. 931, et. Pennsylv. nom. *obtusissima*.
*443. 124. P. *fuscocarneus*, Pers. Myc. Eur. 130, Bethlehem rar. et nomine P. *fimbriatus* quibusdem communicatus.

β Poris candidis.

444. 125. P. *medulla panis*, F. 380, n. 13, β, Syn. Car. 928, et. Bethlehem frequens.
*445. 126. P. *tuberculosus*, F. n. 14, Salem et Bethlehem.
446. 127. P. *vitreus*, F. n. 15, Syn. Car. 929, et. Bethlehem.
*447. 128. P. *vulgaris*, F. n. 16, vulgatissimus Bethlehem.
*448. 129. P. *calceus*, F. n. 16, β, noster certe speciem meruit, in trunco dejecto horti Bartram.
*449. 130. P. *callosus*, F. n. 17, rarior Bethlehem.
450. 131. P. *vaporarius*, F. 19, Syn. Car. 934, et Bethl.
*451. 132. P. *colliculosus*, Pers. Myc. 140, rarius Bethl.
*452. 133. P. *obducens*, Pers. Myc. 142, maximus Bethl. Pedaliter effusus; juniore aetate membranam lutescentem splendentem sistit; demum crassus.
*453. 134. P. *dentiporus*, Pers. Myc. 143, in ligno et cortice Bethl. elegantulus et distinctus.
*454. 135. P. *versiporus*, Pers. Myc. 145, huc pertinere saltem videtur fungus noster membranaccus et perdistinctus.
*455. 136. P. *terrestris*, F. p. 383, n. 25, passim in adustis truncis, Bethlehem occurrit.
*456. 137. P. TENUIS, L. v. S., ad fibrosam internam corticem Castaneorum Bethl.
P. longe longitudinaliter effusus, membranam sistens tenuem subdetrahendam albo-pallentem aequabilem margine substerili albidiori. Poris majusculis subflexuosis, parum excavatis pallidis.
457. 138. P. *mucidus*, F. 382, n. 21, Syn. Car. 932, et. Bethl.
*458. 139. P. *Radula*, F. n. 22, Salem et Bethl.
*459. 140. P. *micans*, F. n. 23, Bethlehem rarior obvius.
*460. 141. P. *Vaillantii*, F. n. 26, Bethl. in cryptis.
461. 142. P. *sanguinolentus*, F. n. 24, Salem solummodo.
462. 143. P. *molluscus*, F. n. 27, Syn. Car. 938, et. Bethl. saepe sulphurascente colore.
*463. 144. P. *farinellus*, F. n. 28, in cortice pineo prope Kaign's Point, Philadelphia.
*464. 145. P. *aeneirinus*, Elench. Frie. p. 122, Bethlehem.
*465. 146. P. *xylostromeus*, Pers. Myc. 159, Bethlehem, rarus sed bene distinctus.
*466. 147. P. *laneus*, Pers. Myc. 160, etiam bona species in montibus Lehigh inventa.
*467. 148. P. DECOLORANS, L. v. S., rarior Bethlehem in cortice dejecto.
P. minutus, 3—4 lin. diametro, sed longe lateque confluens, non effusus, sed quasi totaliter affixus, margine inflexo libero, membranaceo. Primum molluscus, albus, decolorans ac sordide brunneus devenit. Poris magnis subflexuosis, e forma orbiculari in flexuosam confluit. Tenerrimus.
*468. 149. P. CANDIDISSIMUS, L. v. S., rarior ad ligna putrida, Bethlehem.
P. effusus; membrana tenuissima, bombycina, sed tamen detrahenda. Poris maximis demum obliquis, cum membrana candidissimis. Ad Polystictas pertinere videtur, sed membrana detractabilis obstat.
*469. 150. P. INTERNUS, L. v. S., Bethlehem passim interiori parte truncorum obvius.
P. longitudinaliter penetrans in cavitatibus trunci putridi varie flexuosus ad 3—4 uncias, primo molluscus, crassus margine demum inflexo. Tubis saepe obliquis longioribus. Poris flexuosis minutis. Color totus albus, nisi statu sicco subpallescit.

Trib. 6. Polysticta.

*470. 151. P. *corticola*, F. p. 385, n. 1. Bethlehem rar.
471. 152. P. *reticulatus*, F. n. 3, Syn. Car. 941, et. Bethl.
472. 153. P. lilacinus, L. v. S., Syn. Car. 942, solum in Salem.

Genus 8. Porotheleum.

*473. 1. P. *subtile*, F. p. 506, Suppl. Salem, Syn. Car. 940, et etiam Bethlehem in cortice.
*474. 2. P. *fimbriatum*, Ibid. n. 2. Species nitidissima, solummodo Bethl.
475. 3. P. pezizoides, L. v. S., Syn. Car. 943, nondum in Pennsylvania obvium.

Genus 9. Daedalea.

1. *Stipatatae.*

*476. 1. D. *biennis* (Sistotrema, *Boletus distortus*, Syn. Car. 903), et rarus Pennsylv. F. p. 332.

2. *Dimidiatae.*

α *Agaricini.*

*477. 2. D. *quercina*, F. 333, 4, Bethl. rara 846.
478. 3. D. *betulina*, F. p. 333, Syn. Car. 822, vulgatiss., et. Pennsylv. Ag. coriaceus.
479. 4. D. *sepiaria*, F. 333, et Syn. Car. 823. Agaricus passim et. Pennsylv. Jefferson County.
480. 5. D. *abietina*, F. 334, Syn. Car. 820, et. Bethl.
481. 6. D. *trabea*, F. 335, Syn. Car. 824, vulgaris ad ligna fabrefacta.
482. 7. D. *confragosa*, F. 336, n. 14, e Georgia accepi.
*483. 8. D. *Pini*, F. n. 15, Mauch Chunk, optima.
484. 9. D. *unicolor*, F. 17, Syn. Car. 948. Sistotrema cinereum, freq. etiam Bethl.
*485. 10. D. *variegata*, F. 18, rara sed nitida, Bethl.

β *Polyporoideae.*

486. 11. D. *gibbosa*, F. 21, Syn. Car. 847, et. Bethl. rara.
*487. 12. D. *albida*, F. 22, Bethlehem, non albida, Syn. Car.
*488. 13. D. *discolor*, Elench. F. p. 68, n. 156, Syn. Car. 851, D. *albida*, et. Bethlehem.
489. 14. D. *rubescens*, F. 25, passim Syn. Car. 850, etiam Bethlehem.
490. 15. D. *angustata*, F. 23, Syn. Car. 849, nondum Pennsylv.
*491. 16. D. *aurea*, F. 24, var. β, ferruginea, Mauch Chunk.
492. 17. D. zonata, L. v. S., Syn. Car. 852, etiam Pennsylvania, praesertim in truncis stantibus.
493. 18. D. subtomentosa, L. v. S., Syn. Car. 853, Elench. F. p. 70, solummodo Carolina.
*494. 19. D. Merulioides, L. v. S., abnormis, substantia subcarnosa, terrestris, Salem.

D. sessilis, apus, dimidiata. Pileo pulvinato, subcarnoso postice substipitatim porrecto, margine subundulato, et quasi circum pseudostipitem auriculato, ibique albo-subtomentoso, ceterum glabro, olivacco-cervino. Hymenio poris irregularibus, latis, merulioideis, lutescenti viridibus, subangulatis, primum mollinsculis. Diametro 1—2 unciali.

Genus 10. Merulius.

α *Apus.*

495. 1. M. *tremellosus*, F. p. 327, 1, Syn. Car. 838.
*496. 2. M. strigoso-zonatus, L. v. S., ex Nova Anglia communicavit D. Torrey.

M. pileo carnoso-tremelloso, substantia prioris, sed magis compacto-indurescente; junior fungus resupinatus, sed plerumque in pileos plures subimbricatos, undulato-repandos, superne strigoso-zonatos porrectus, spadiceo-ferrugineos: fasciis nigris glabriusculis; margine plicato. Hymenio

plicis rugosis undulatis, subradiantibus, centro subporioideis, purpurascenti-fuligineis. Magnitudine prioris.

β Resupinatus.

497. 3. M. *rufus*, F. 327, n. 2, Syn. Car. 845, et. Bethl.
498. 4. M. *serpens*, F. n. 3, Syn. Car. 844, freq. et. Bethl.
*499. 5. M. *crispatus*, F. n. 4, Salem et Bethlehem.
*500. 6. M. PALLENS, L. v. S., ad ramos dejectos in montibus. Bethlehem.
M. resupinato-effusus, tamen undique in pileos porrectus, longitudinaliter confluens, longe lateque Pileis albidis, strigoso-tomentosis, subimbricatis, inflexis. Hymenio ex albido fuligineo, subpurpurascente et demum expallente. Pileis valde obliteratis, statu sicco. Ad 6 uncias effusus in ramulos M. *crispato* satis affinis. An ad priorem sectionem.
*501. 7. M. *fugax*, F. n. 5, Bethl. Candidus elegans.
502. 8. M. *lacrymans*, F. n. 6, Syn. Car. 841, *destruens*, frequens in cellis, et. Bethlehem.
503. 9. M. BRASSICAEFOLIUS, L. v. S., Syn. Car. 842, Elench. F. p. 60, in cellis, Salem. An Himantia domestica huc.
504. 10. M. *vastator*, F. n. 7, Syn. Car. 843. Salem et Bethl.
*505. 11. M. *molluscus*, F. n. 8, Salem et Bethl.
*506. 12. M. *himantioides*, F. n. 9, Bethlehem, ligna putr.
*507. 13. M. *Porinoides*, F. n. 10, rarius Salem in interiori Mali corrupti cavitate.

SUBORDO III. HYDNEI.

Genus 11. FISTULINA.

508. 1. F. *hepatica*, F. p. 396, n. 1, Syn. Car. 944. Vulgaris etiam per totam Pennsylvaniam saepe maxim.
509. 2. F. RADICATA, L. v. S., Syn. Car. 945, Elench. F. p. 128. Nondum Pennsylv. reperta.

Genus 12. HYDNUM.

1. *Mesopus.*

† *Carnosa.*

510. 1. H. *imbricatum*, F. p. 399, n. 1, Syn. Car. 965, et. Pennsylv.
511. 2. H. *subsquamosum*, F. n. 2, Syn. Car. 966, freq. et Bethl.
*512. 3. H. *laevigatum*, F. n. 3, Bethlehem rarior.
513. 4. H. *repandum*, F. n. 6, Syn. Car. 967, freq. Pennsylv.
514. 5. H. *rufescens*, F. n. 7, Syn. Car. 968, et. Pennsylv. freq.
*515. 6. H. *infundibulum*, F. n. 9, Bethlehem rarius.
*516. 7. H. *fusipes*, Pers. Myc., Bethlehem rarius, bene distinctum.
517. 8. H. CANUM, L. v. S., Syn. Car. 974, an a priori differt, et. Pennsylvania.
*518. 9. H. DELICATUM, L. v. S., rarissime ad terram in Rhododendretis. Bethl.
H. minus, vix unciam altitudine excedens. Pileo carnoso, lento, infundibuliforme, limbo subregulariter late repando, cinereo gilvo. Stipite centrali, in basin attenuato, subsolido, 1 lin. crasso, cinerascente. Hymenio subulis rectis, cinereis, breviusculis, manifestius asciferis. Substantia exsucca.

†† *Suberosa.*

519. 10. H. *compactum*, F. n. 12, Syn. Car. 970, non in Pennsylv.
520. 11. H. *aurantiacum*, F. 13, Syn. Car. 969, etiam Bethl.
*521. 12. H. *ferrugineum*, F. 14, Bethlehem frequens.
*522. 13. H. *cinereum*, F. n. 15, valde distinct. Bethl.
523. 14. H. *cyathiforme*, F. 18, Syn. Car. 971, *concrescens*, Salem.

524. 15. H. *connatum*, F. 19, an Syn. Car. 973, *spadiceum*, non infreq. Carolina longis seriebus.
525. 16. H. *tomentosum*, F. 20, Syn. Car. 972, nondum obvium in Pennsylvania.
*526. 17. H. CORIACEO-MEMBRANACEUM, L. v. S., distinctissima species, passim in terra, Bethl.
H. Pileis concrescentibus, lato-repandis, subinfundibuliformibus, coriaceo-membranaceis, exacte Polypori *versicoloris* substantia in varietati ejusdem membranacei ceterum glabris, strigoso-zonatis, margine strigoso-fimbriatis, saepe laceratis, 1—2 uncialibus diametro, pallide cervinis. Subulis sparsis, subulatis, longis saepe tortis, lutescentibus. Stipitibus tenuibus, centralibus, brevibus, concrescentibus.

2. *Pleuropus.*

527. 18. H. *gelatinosum*, Fr. p. 407, n. 3, Syn. Car. 979, etiam rarissime circum Bethl. et Philadelphia.
528. 19. H. ADUSTUM, L. v. S., Syn. Car. 977 et Icone, Elench. F. p. 132, etiam Pennsylv. sed multo rarius quam in Carolina.
*529. 20. H. *erinaceus*, Fr. pag. 407 et 408, Bethlehem, et prope Jonestown, Swatara, in trunco ibique *maximum*. Saepius occurrit in arboribus adhuc stantibus ad 10 ped. altitudine a terra. Transitum ad seq. sectionem fecit.

3. *Merisma.*

530. 21. H. *coralloides*, F. p. 408, Syn. Car. 994, et. Pennsylv.
531. 22. H. RAMOSUM, L. v. S., Syn. Car. 996, et. Bethl. observatum, tamen a priori non multo abhorret.
532. 23. H. *Caput Medusae*, F. p. 409, n. 3, Syn. Car. 995, etiam Pennsylvania non infrequens. Haec species ad Hericium ex fungis Clavatis secundum Friesii Syst. Veget.

4. *Apus.*

533. 24. H. MOLLE, L. v. S., rarum ad truncos et ramos dejectos, Bethl.
H. dimidiato-rotundum, crassum, unciali diametro, substantia molli exacte ut in *Polyporo molli*. Pileo strigoso, pallido. Subulis irregularibus, cinereis polyporoideis.
*534. 25. H. *orbiculatum*, F. p. 412, n. 6, rarius Bethl.
*535. 26. H. *cirrhatum*, F. 411, n. 2, Salem et Bethl.
*536. 27. H. *occarium*, F. 412, n. 8, Salem et Bethl.
537. 28. H. *strigosum*, F. p. 414, n. 15, Syn. Car. 975, parasiticum. Etiam Bethlehem, nigrum.
538. 29. H. *ochraceum*, F. n. 16, Syn. Car. 976, et Bethl. freq.
539. 30. H. RHOIS, L. v. S., Syn. Car. 978, Elench. F. p. 134, et. Pennsylvania freq. in Rhoe putrido.
540. 31. H. OLIVACEUM, L. v. S., Syn. Car. 952. Sistotrema vulgatum, etiam Pennsylvania.

5. *Resupinatum.*

† *Aculeis aequalibus.*

541. 32. H. *macrodon*, F. p. 415, n. 1, Syn. Car. 980, etiam Bethlehem. Interdum solummodo ex subulis longis conformatum.
*542. 33. H. *membranaceum*, F. n. 2. Nostra species distinctissima, membranam sistit detrahibilem; ex New York, Dr Torrey misit.
543. 34. H. *fusco-atrum*, F. n. 3, Syn. Car. 982, *castaneum*, passim in cortice et ligno Castaneorum, Bethlehem et Salem.
*544. 35. H. *ferruginosum*, F. p. 416, n. 6, passim Bethl.
545. 36. H. *microdon*, F. p. 417, 9, Syn. Car. 981, et. Bethl.
*546. 37. H. *alutaceum*, F. 10, rarius in cortice Vitis, Bethl.
*547. 38. H. *fasciculare*, F. 12, rarius Salem et Bethl.
548. 39. H. *mucidum*, F. p. 418, n. 14, Syn. Car. 983, et. Bethlehem, saepe longissime diffusum.
549. 40. H. *diaphanum*, F. 15, Syn. Car. 989, et. Bethl.
550. 41. H. *obtusum*, F. 17, Syn. Car. 987, freq. ad truncos, et. Bethl.
551. 42. H. *crustuosum*, F. 18, Syn. Car. 984, et. Bethl.
552. 43. H. *farinaceum*, F. 19, Syn. Car. 985, et. Bethl.
553. 44. H. *nivcum*, F. 20, Syn. Car. 988, passim et. Bethl.
*554. 45. H. *subcarnaceum*, Fr. 13, aff. *mucido*, Bethl.
555. 46. H. SULPHUREUM, L. v. S., Syn. Car. 986, Elench. F. p. 138, n. 7.

*556. 47. H. VITICOLA, L. v. S., Elench. F. p. 138, n. 14, β. Nobis a *mucido* bene distinctum videtur —etiam quodammodo ad apodes vergens ob marginem liberum strigosum et pileum membranaceo-coriaceum. Subulis longissimis dense stipatis cinereis.

*557. 48. H. SUBRESUPINATUM, L. v. S., longe lateque interruptim effusum in ramis, Bethl.

H. interruptim effusum in plagis semipedalibus, ambitu subdeterminato, quasi constat e multis pileolis minoribus, resupinatis, interruptim connexis et fere confluentibus, submembranaceis, margine sterilibus, colore pallide lutescente. In quoque pileolo dentes subirregulares assurgunt, fasciculatim in junioribus dispositi, compressi, demum ad 2 lineas elongati, subteretes, acuti, inflexi, subpenduli, concolores.

558. 49. H. HIMANTIA, L. v. S. (Syn. Car. 992), non rarum in putridissimis lignis, Bethl. et Salem.

H. floccis filamentosis crassis Himantioideis ad uncias 6 longitudine implexis irrepentibus et arbusculum effientibus, albis, tomentosis, passim in membranam aut pannum tenerrimum dilatatis. Subulis majusculis, cylindricis, adpressis, stipatis, obtusis, flexuosis, griseo cinereis pulverulentis (ex ascis solutis) impositis.

*559. 50. H. BYSSINUM, L. v. S., subfrequens in ligno putridissimo, Bethl.

H. membrana tenuissima, subfloccosa, pulverulenta, byssina, subevanescens, non regulariter ambitu determinato, obsita subulis longis, distantibus, subflexuosis, e basi crasso in apicem acutissimum elongatis, cum membrana in ambitu fibrillosa ex ochraceo-badiis.

*560. 51. H. EPIPHYLLUM, L. v. S., rarius effusum insuper folia putrida, Bethlehem.

H. irregulariter effusum, tenue, byssinum aut hypochnoideum, pulverulentum, e ferrugineo brunneum. Subulis minutis, brevioribus, concoloribus, obtusissimis, fere papillae formibus, subglobulosis; in juniori fungo reticulatim dispositis, demum aggregatis.

†† *Aculeis compressis.*

561. 52. H. *squalinum*, Fr. p. 420, n. 21, *fuscescens* nobis, Syn. Car. 961, olim. Ad ligna decorticata Bethl. rarum.

562. 53. H. *viride*, F. p. 421—25, Syn. Car. 955, et Bethl. (Systot.) certissime Hydnum, nec, ut auctores habent, fungus Hyphomycetum ex ordine.

*563. 54. H. AERUGINOSUM, L. v. S, rarum Bethlehem occurrit in putridissimis sub cortice.

H. Membrana tenuissima byssina, subeffiguratim orbiculata, aeruginosa, diametro unciali. Subulis brevioribus, distantibus, crassis, e tereti compressis, colore ex ime aeruginoso in nigrum abiente.

564. 55. H. *fimbriatum*, F. 421, n. 27, Syn. Car. 957, freq. Bethl.

565. 56. H. *spathulatum*, F. Elench. p. 139, Syn. Car. 993, nec Schraderi—Salem et Bethl. (digitatum, Pers.).

*566. 57. H. *quercinum*, F. 423, n. 33, Bethl.

*567. 58. H. *argutum*, F. p. 424, n. 36, Bethl.

*568. 59. H. *subtile*, F. 39, rarius in corticibus, Bethl.

*569. 60. H. *stipatum*, F. 40, in cortice Vitis, Bethl.

570. 61. H. CINNABARINUM, L. v. S., Syn. Car. 963, Georgia, Fries. Elench. p. 137, n. 7, b.

571. 62. H. CROCEUM, L. v. S., Syn. Car. 962, Fr. Elench. p. 137, 7, b. etiam Pennsylvania inventum.

*572. 63. H. LUTEOPALLIDUM, L. v. S., rarius Bethlehem in cortice Vitis aestivalis.

H. membrana tenuissima byssina, marginibus fimbriatis floccosis, non valde contigua, ex luteopallida, determinatim effusa. Subulis compressis, ramoso-fimbriatis, basi elongato, quasi fasciculatim confluentibus, aut coalitis, longiusculis, flavescenti-pallidis et subcroceis. Ad 3 unc. effusum.

Genus 13. SISTOTREMA.

573. 1. S. *confluens*, Fr. p. 426, Syn. Car. 946. S. *muscorum*, Syn. Car. 947, ad *Hyd. epiphyllum*, aut tale pertinet, et eliminatur.

Genus 14. IRPEX. Sys. Vegetab. p. 81, et Elench. F. 143.

1. *Apodes.*

*574. 1. I. *paleaceus*, Elench. F. p. 144, n. 2. Nobis *Hydnum decolorans* olim, maximus in ramis dejec-

tis Montibus; praesert. Betularum. Primo adspectu non absimilis *Daedaleae cinereae*. An nova species.

*575. 2. I. *fuscoviolaceus*, Elench. F. n. 3, nobis Hydn. *veluta*, rarius Salem et. Bethl.

*576. 3. I. *lacteus*, Elench. F. n. 4, Hydn. F. p. 412, Bethl. in truncis emortuis Araliae spinosae.

*577. 4. I. *sinuosus*, Elench. Fr. n. 5, (H. *morincola*, L. v. S., olim) Bethl. in

2. *Resupinati.*

*578. 5. I. EPIPHYLLA, L. v. S., distinctissimus et elegans Fungus in stipitibus et super folia subtecta radice subefossi trunci, Bethlehem.

I. subresupinatim effusus, pileis tamen subdimidiatis porrectis, longe lateque folia obtecta, ramulosque dejectos conglutinans. Unicolor, ochraceo-pallidus. Pileolis inflexis irregularibus, glabriusculis cervino-ochraceis. Subulis in hymenio majusculis, basi reticulatim conjunctis, irregulariter incisis, concoloribus. Ad 2—3 uncias, longitudine ac latitudine investit folia.

579. 6. I. TULIPIFERAE, L. v. S., Syn. Car. Polyp. 935, et nullimodo *Polysticta*. Salem et Bethlehem valde frequens et longissime effusus.

*580. 7. I. FUSCESCENS, L. v. S., rarius ad ligna Rhododendri, Bethl.

I. elongato-orbiculatim confluens, resupinatus, efficiens pellem crassiusculam dense intertextam subfloccosam, ambitu effigurato, margine sterili, ex olivaceo-cervinam. Demum dentibus crassis compressis obtusis (juniori statu mere tuberculi sunt) passim truncatis, cervinis, undique cum subiculo ascis prominulis fuscis obsitis. Unciali diametro.

*581. 8. I. OCHRACEUS, L. v. S., ad corticem, Bethlehem.

I. resupinatus, membranaceus, membrana ex candido-ochracea, fibrillis contexta, ambitu subeffigurato. Dentibus poriformibus, laceris, majusculis, quasi fasciculatis, et in distantioribus spathulato-canaliculatis, eleganter ochraceis.

582. 9. I. CINERASCENS, L. v. S., Syn. Car. 930, *Polyporus*. Rarissime occurrit sed distinctissimus Carolina.

583. 10. I. *Cerasi*, F. p. 382, 20, Syn. Car. 956, et. Bethl.

584. 11. I. *spathulatus*, F. Elench. 146, n. 7, Syn. Car. 959, et. Bethl. frequens. Sistotrema olim.

585. 12. I. *obliquus*, F. 37, Syn. Car. 960, et. Bethl.

*586. 13. I. *deformis*, Elench. F. p. 147, F. 38, *pseudo-boletus*, rarius Bethl.

587. 14. I. NIVEUS, L. v. S., Syn. Car. 964, sub Sistotrema Carolina invent.

*588. 15. I. *carneus*, Fries. Elench. 148, et F. 420, Hydn. Salem solummodo obvius.

Genus 15. RADULUM.

*589. 1. R. *orbiculare*, Elench. F. 2. Hyd. radula, F., ex Nova Anglia, Torrey.

*590. 2. R. *molare*, F. Elench. n. 3, passim Bethlehem, nobis olim H. paradoxium.

591. 3. R. *fagineum*, F. p. 423, Hydn. Syn. Car. 954, Sist. et. Bethl.

*592. 4. R. *laetum*, F. p. 445. Thel. *hydnoidea*, Pers. Bethlehem passim.

*593. 5. R. *botrytes*, Elench. Fr. p. 152, n. 6, passim in cortice dejecto Bethl. Olim Hyd. *sparsiaculeatum*, L. v. S.

*594. 6. R. *aterrimum*, Elench. F. p. 153. *Sphaeronema* freq. Bethl. in ramis et palis.

*595. 7. R. PINI CANADENSIS, L. v. S., in ramis dejectis, P. canadensis, Mauch Chunk.

R. corticale, resupinatum, subinnatum, effusum, ambitu varie effiguratum, 1—2 uncias latum, interdum indeterminatum. Colore ex albido subcinerascente in alutaceum vergente. Papillis majusculis fasciculatis, brevioribus, obsitum est Hymenium concolor subrugosum. Juniore aetate superficie rimosa.

*596. 8. R. HYDNANS, L. v. S., late effusum in ligno nudo carioso, Bethlehem.

R. longe lateque (ad 2—4 unc.) effusum, subindeterminatum, in ambitu subbyssinum, tenuius et subpulverulentum, candidum; centro autem ex luteo rubro-pallens. Corticium refert satis compactum et crassum, superficie rugulosa, rivulosa, tuberculis subsubuliformibus, difformibus, confluentibus, crassis, breviusculis, apice candicantibus, ceterum concoloribus. Colore ac indole differt a R. *laeto* cui tamen affine.

*597. 9. R.? INVESTIENS, L. v. S., abnorme: frequenter investit tomento aut pelle subbyssino (ad instar T. byssinae, &c.) stipites emortuos adhuc stantes *Diervillae Tournefortii*, Bethl.

R. longe lateque stipites arcte investiens, pelle subtomentosa ochraceo-pallida. Passim autem processus sparsi subuliformes, 2—6 lineares, teretes, tenues, subarcuati, indoles pelliculae sese ostendunt. Vix hujus loci.

SUBORDO IV. AURICULARINI.

Genus 16. - PHLEBIA.

598. 1. P. *mesenterica*, Pers. Syn. 571, Elench. F. p. 154, Syn. Car. 1018. Bethlehem in trunco fraxineo.

*599. 2. P. *merismoides*, F. 427, n. 1, pulcherima, Bethlehem. Nostra fere sanguinea.

*600. 3. P. *radiata*, F. n. 2, passim Bethlehem.

*601. 4. P. *vaga*, F. n. 4, distinctam speciem amicissimus Torrey ex New York communicavit.

*602. 5. P. CINNABARINA, L. v. S, citata Syst. Veg. F. p. 83, ad truncos Carolinae et Pennsylvania omnino non ad radiatam ut habet Fries. Elench. p. 155.

*603. 6. P. COCCINEOFULVA, L. v. S., in trunco carioso Juglandis tomentosae, Nazareth.

P. in cavitatibus interioribus trunci cariosissimi valde irregulariter et inaequabiliter insinuato-effusa, penetrans ipsum lignum subiculo suo et quasi absorbens. Ambitu valde irregulari, strigoso-penicilloso, et substantia ipsa fibrilloso-spongiosa, colore elegantissimo fulvo-croceo. Versus centrum subiculum quasi in membranam thelephoroideam explanatur, pulcherrime coccineam, primum tuberculosam; demum processus elongatos, lobulosos, rugiformes, non valde elevatos, coccineos, sed pruina albicanti adspersos, molliusculos ostendit.

*604. 7. P. HYDNOIDEA, L. v. S., longe lateque in trunco putrido ingenti effusa in montosis Bethl.

P. effusa in corruptissimis interioribus partibus, irregulariter tuberculosa; subiculo crasso, substantia fibrillosa, subpulverulenta, demum subsuberosa. Colore fulvo-rufo gaudet. Undique tecta processubus hydnoideis, brevioribus, quasi ex elongatis papillis ortis subdiaphanis, concoloribus, apice demum fimbriato-fibrillosis. Ulnarem longitudinem ac latitudinem occupat.

Genus 17. THELEPHORA.

Trib. 1. MESOPUS.

605. 1. T. CANTUARELLA, L. v. S., Syn. Car. 1000, Elench. F. p. 164, nondum in Pennsylvania.

*606. 2. T. *pannosa*, F. p. 430, n. 2, Salem et Bethl.

607. 3. T. REGULARIS, L. v. S., Syn. Car. 999, Elench. F. p. 165, nondum in Pennsylvania.

608. 4. T. *caryophyllea*, F. 430, n. 5, Syn. Car. 998, et. Bethl.

*609. 5. T. MULTIPARTITA, L. v. S., Elench. F. p. 166, passim in Carolina; frequentior Bethlehem in insula fluminis Lehigh.

*610. 6. T. VIALIS, L. v. S., rarius ad vias Carolina. Frequens Bethlehem in insula jam dicta et melius evoluta. Valde polymorpha.

T. coriacea, junior fragilior demum indurescens. Pileis polymorphis, imbricatis et dimidiatis aeque ac regularibus, pluribus confluentibus aut concrescentibus etiam omnino singulis, laciniato-multifidis, 1—2 uncialibus et multo minoribus, cupulatis saepe, superne adglutinato-fibrilloso-plicatis, luteo-fuligineis. Stipitibus singulis aut concrescentibus, crassis ac tenuibus, saepe omnino carentibus, saepe longiusculis, indurescentibus. Hymenio plicato venoso, e luteo-pallido fuligineo, ascis prominulis et inde demum subfloccoso.

Trib. 2. MERISMA.

*611. 7. T. *coralloides*, F. 432, n. 1, Bethlehem in insula.

612. 8. T. *palmata*, F. 432, n. 2, (M. foetidum) Syn. Car. 1066, cum suis varietatibus vulgaris, et. Bethlehem.

*613. 9. T. *tuberosa*, Elench. F. p. 167, 2 b, Greville Tab. 178, ad terram, Salem et Bethlehem.

614. 10. T. *flabellaris*, F. n. 3, Salem et Bethlehem; Syn. Car. 1065.

*615. 11. T. *stabularis*, F. 435, n. 7, Syn. Car. non sed Salem.

*616. 12. T. FIMBRIATA, L. v. S., Syn. Car. 1067, Salem et Bethl.

617. 13. T. CANDIDA, L. v. S., Syn. Car. 1069, Elench. F. p. 168, et. Bethlehem frequens.

618. 14. T. CLADONIA, L. v. S., Syn. Car. 1068, Elench. F. p. 168, etiam Pennsylvania.

*619. 15. T. PALLIDA, L. v. S., frequentissime occurrit ad terram densis sylvis Bethlehem. Maxima. Caespites efformat saepe 6 unciales longitudine, 3—4 altitudine.

T. erecta, basi quasi tuberosa solida connata, stipitiformi, ramis multis acutis divisis, trunco cum pileis multipartito, compresso-sulcato. Colore statu vegeto, omnino pallido, sed hymenio externi et in stipitem versus, demum rufescit. An ad T. Kittlingeri. F. p. 454.

*620. 16. T. CAESPITULANS, L. v. S., freq. locis consuetis Bethlehem; ex vicinitate T. *palmatae* sed habitu omnino diversa.

T. caespites formans altitudine et longitudine unciali. Basin versus in corpus solidum concrescunt rami ad dimidiam partem, tum assurgunt stricti divisi, invicem arcte adpressi, compressi, imo subcanaliculati, obtusi plerumque in apicibus, et ibi albicantes. Colore e bruneo fuligineo.

621. 17. T. *cristata*, F. p. 434, Syn. Car. 1062, etiam Pennsylvania obvia.

622. 18. T. *penicillata*, F. n. 6, Syn. Car. 1063, *fuscescens*, Salem et Pennsylvania non infrequens.

623. 19. T. SERRATA, Pers. Myc. et Synops. Salem passim. Huc videtur pertinere. Species nostra cum nulla alia confundenda.

Trib. 3. APUS.

Subtrib. 1. *Phylacteria.*

624. 20. T. *terrestris*, F. 431, n. 1, Syn. Car. 1001, vulgata in pinetis Carol., rara Bethlehem.

625. 21. T. *laciniata*, F. n. 2, Syn. Car. 1002, et. Bethl.

*626. 22. T. *frondescens*, F. p. 436, rarissima Bethl. quam Syn. Car. intybaceam vocavimus.

*627. 23. T. *biennis*, F. 449, Elench. p. 171, Bethlehem in montosis.

628. 24. T. *fuscocinerea*, Pers. Myc. p. 114, quam habemus ut speciem propriam et bonam exhibemus, Bethl.

*629. 25. T. *gausapata*, Elench. F. p. 171, optime quadrans passim, Salem ac Bethlehem.

*630. 26. T. ALBIDO-BRUNNEA, L. v. S, in cortice putrido truncorum propius terrae, Bethl.

T. longe lateque confluens; irregulariter subimbricata, saepissime resupinata, rarius in pileos porrecta substipitatos. Superne ime brunnea, subtomentosa, quasi pileis undulatim confusis, subcrispis spongioso-suberosis. Hymenio inaequabili, laeviusculo, candido. Ad plures uncias effusa. Ubi pilei distincti, diametro vix excedunt semiunciam.

*631. 27. T. LUTOSA, L. v. S., rarius ad terram in viis sylvaticis Carolina.

T. minor, pileis dense imbricatis, postice in stipites subhorizontaliter attenuatis, undulato-plicatis, semiuncialibus, superne quasi subtomentosis pulverulentis. Hymenio sublaevi et papilloso, subvelutino ex ascis, cum toto fungo lutose lutescente. Marginibus limbi sulobati demum inflexis. Fungus, primum subcarnosus, demum indurescit.

632. 28. T. *bicolor*, F. p. 438, Salem, Syn. Car. 1005, ob hymenii indolem huc omnino pertinet, sed *albido-brunneae* nostrae satis affinis.

Subtrib. 2. *Stereum.*

633. 29. T. *rubiginosa*, F. p. 436, n. 2, Syn. Car. 1004, freq. Bethl.

634. 30. T. *tabacina*, F. n. 3, Syn. Car. ferruginea, 1008, frequens etiam Pennsylvania.

*635. 31. T. *crocata*, Elench. F. p. 173. Bethlehem passim, nobis olim T. *subpileata*.

*636. 32. T. *leprosa*, Elench. F. Bethlehem eximia.

637. 33. T. IMBRICATULA, L. v. S., ex New York misit Torrey et rarissime Bethl. inveni.

T. resupinato-effusa, interdum in pileolos crebros imbricatos porrecta, extus luteo-ferrugineos, strigoso-floccosos, undulatos, membranaceo-coriaceos, non zonatos, subcrispos. Hymenio fusco-umbrino subrutilante, rugosoplicato nec vere tuberculoso, saepe rimoso, ascis prominulis, subulatis, brevibus, creberrimis, umbrino-fuscis. Ubi omnino resupinata, effiguratim marginata est, ambitu strigoso-floccoso.

Subtrib. 3. *Auricularia.*

† *Coriaceae.*

*638. 34. T. *atrata*, F. n. 5, p. 437, rara species Bethlehem.

639. 35. T. *versicoloris*, var. FASCIATA, L. v. S., Elench. F. p. 175, Syn. Carol., 1011, vulgata et saepe maxima, etiam Pennsylv.

640. 36. T. *spadicea*, F. p. 438, n. 9, Syn. Car. 1006, etiam Bethl.

641. 37. T. *rugosa*, F. 439, F. Elench. 177, Syn. Car. 1009, etiam Bethl.

642. 38. T. STYRACIFLUA, L. v. S., Syn. Car. 1010, Elench. F. p. 177, Salem.

643. 39. T. *hirsuta*, F. 13, Syn. Car. 1014, rarius Bethlehem, *β ramealis*, F. Elench. p. 178 s. varietas valde insignis et Pennsylvania vulgata, ubi rarissime inveni T. hirsutam, Syn. Car. 1015.

*644. 40. T. *ochroleuca*, F. p. 440, n. 14, Salem et Bethl. rara.

*645. 41. T. *purpurea*, F. n. 15, passim Salem et Bethl.

646. 42. T. *sanguinolenta*, F. n. 16, Syn. Car. 1013, nondum Bethl.

647. 43. T. *striata*, F. Elench. p. 179, Syn. Car. 1016, SERICEA, L. v. S., etiam freq. Bethlehem.

648. 44. T. GRISEA, L. v. S., Syn. Car. 1012, Elench. F. p. 179, n. 19, rara species Carolinae.

*649. 45. T. OCHRACEO-FLAVA, L. v. S., Bethlehem in ramis. Etiam ex Florida, Leconte.

T. subresupinatim effusa et elongato-confluens in ramis tenuioribus, pileis ¼ uncialibus porrectis membranaceo-coriaceis, inflexis, candidis, strigosissimis, subfasciatis. Hymenio flavo expallente, laeviusculo, tuberculis tantum evanidis. An 2—3 uncias confluit, saepe dorso affixo singuli pilei orbiculatim protunduntur.

650. 46. T. SUBZONATA, L. v. S., Syn. Car. 1017, *ochraceae*, Bethl. Elench. F. p. 181, non ochracea Fries.

*651. 47. T. CINERASCENS, L. v. S. rarius Bethlehem in truncis semivivis Mori albae.

T. pileata ac resupinato-effusa. In perfectioribus, pileis dimidiatis confluentibus, strigoso-zonatis, unicoloribus, cinereo-albidis uncialibus, limbo tenuiori minus strigoso. Hymenio e cinereo subfuliginoso-purpurascenti, siccitate praesertim, ubi resupinatim effusum est, rimoso. Ascis cinereis, prominulis, pellucidis. Coriacea substantia. Hymenio demum expallescente, pseudo-tuberculoso. Plagas bi- vel tri-unciales occupans.

†† *Ceraceae.*

*652. 48. T. *evolvens*, F. 441, n. 1, rarior Bethl. ol. *propullans*, L. v. S.

*653. 49. T. *amorpha*, F. Elench. p. 183, Pers. Syn. Peziza, olim nobis *Phyllacterium pezizoideum*. Rarissime inventa, sed distinctissima. Hope, Jersey, in cortice Fraxini.

654. 50. T. *salicina*, F. 440, n. 2, freq. in Salicibus Americanis, praesertim S. *lucida*, Bethl. et Salem. Est *cruenta* Synopseos Carol. 1029.

655. 51. T. *quercina*, F. 3, Syn. Car. 1020, et. Bethlehem frequens.

656. 52. T. *Pini*, F. p. 443, Salem et Bethl. montosis.

657. 53. T. *abietina*, F. n. 5, Syn. Car. 1021, et. Bethlehem freq. etiam in Castaneis.

*658. 54. T. *rufa*, Elench. F. p. 187, n. 29, (*disrupta*, L. v. S.) in cortice Bethlehem.

*659. 55. T. *chailletii*, Elench. F. 188, n. 33, Bethlehem Castaneis, olim Stereum *lilacinum*, L. v. S.

*660. 56. T. *avellana*, F. 442, Bethlehem obvia, bona species.

661. 57. T. ALBOBADIA, L. v. S., Syn. Car. 1045, Elench. F. p. 189. Solummodo Salem inventa.

*662. 58. T. *disciformis*, F. 443, 7, Salem et Bethl. ramis.

663. 59. T. CANDIDISSIMA, L. v. S., Syn. Car. 1061, et. Bethlehem, Elench. F. 189, n. 37. Distinctissima species.

Subtrib. 4. *Stratosae.*

664. 60. T. *frustulata*, F. n. 14, Syn. Car. 1030, valde freq. lignis praesertim querneis durissimis.

*665. 61. T. PALLESCENS, L. v. S., longe lateque effusa, praesertim sub truncis adustis Bethlehem.

T. omnino resupinata, crassa, dura, superficie maxime rugosa, papilloso-granulosa, rimosa, subsicca, ex albido pallescens. Ut priore perennis.

*666. 62. T. INSINUANS, L. v. S., in cavitate truncorum longe lateque insinuata, Bethl.

T. lignosa, crassa, pallida, vix separabilis, resupinatim serpens in cavitatibus internis, superficie inae-

quali. Hymenio rugoso, nec tamen tuberculoso, subvelutino. Intus subtusque fuscescit. Omnino stratosa.

*667. 63. T. *areolata*, F. Elench. p. 190, n. 32, olim a me T. fallax vocata.

Trib. 4. Resupinatus.

Subtrib. 1. *Coniophora.*

668. 64. T. Helvelloides, L. v. S., Syn. Car. 1041, Elench. F. p. 193, rarissima et valde abnormis, etiam Bethl.

669. 65. T. spongiosa, L. v. S., Syn. Car. 1051, et. Bethl. Elench. F. p. 193, n. 2.

*670. 66. T. *puteana*, F. Elench. p. 194, in cellis Bethlehem in lignis fabrefactis.

671. 67. T. *reticulata*, F. Elench. p. 196, marginata L. v. S., Salem et Bethl.

672. 68. T. *byssoides*, F. p. 452, n. 8, Syn. Car. 1042, et. Bethlehem.

673. 69. T. *olivacea*, F. Elench. p. 197, n. 10, Syn. Car. 1050, *β botryoides*, freq. etiam Pennsylv.

674. 70. T. sistotremoides, L. v. S., Syn. Car. 1053, species magna et. Bethl. non infrequens.

675. 71. T. *ferruginea*, F. Elench. p. 198, n. 12, Syn. Car. 1043, frequens etiam in Pennsylvania.

*676. 72. T. *punicea*, F. Elench. p. 199, n. 13, in trunco putrido, Bethlehem.

*677. 73. T. rubropallens, L. v. S., longe lateque effusa in corticibus et lignis Bethlehem.

T. effusa, indeterminatim effigurata, ambitu marginibus latissimis albis; versus centrum subroseo-incarnata, crebre sporidifera aut pulverulenta. Pelliculam efficit ex arcte intertextis filis. Ulnarem longitudinem explet.

*678. 74. T. *umbrina*, Elench. F. p. 199, non Persoonii, Bethlehem non freq. ad cortices.

679. 75. T. coccinea, Syn. Car. 1032, (Swartz sanguinea) omnium pulcherrima, ad truncos solummodo Citrorum Georgia, Florida, etiam Surinam. Specimina floridana pedalia debeo Leconte.

*680. 76. T. lilacina, L. v. S., in cortice Pruni virg. ramorum, Bethl.

T. pellicula tenera, orbiculatim aut effiguratim effusa, latius confluens; ambitu albescente byssino-fibrilloso, in centro efficiens pelliculam aut pannum tenerrimum lilacinum, sed decolorans aetate, pulvere obsitum. Diametro 6 linearum.

Subtrib. 2. *Himantia.*

*681. 77. T. *cinnamomea*, F. Elench. p. 201, 2 b. nobis olim Stereum *griseofuligineum*.

682. 78. T. pedicellata, L. v. S., Syn. Car. 1046, Elench. F. p. 200, in Carolina freq. ad vivos ramos. *Icon in Syn. Car.* T. 2, f. 3.

683. 79. T. *domestica*, F. 481, Bethlehem, Himant. Syn. Car. 1363, in cellis.

*684. 80. T. *fusca*, F. 451, n. 5, huc T. vinosa olim nost. in Mali cortice.

*685. 81. T. *strigosa*, F. Pers. p. 83, n. 1, Bethlehem longe lateque in truncis jacentibus adustis.

*686. 82. T. *violascens*, F. 451, n. 4, in ramis Bethl.

*687. 83. T. *atrovirens*, Elench. F. p. 202, n. 4 b. var. aeruginoso-caesia. Nobis frequens Bethl. ad ligna putridissima, Syn. Car. 1054.

688. 84. T. *caerulea*, Elench. 202, n. 4 c. Syn. Car. 1028, T. *Indigo*, passim et. Bethl.

689. 85. T. *rosea*, F. p. 451, n. 5, freq. Bethl. cortice juniori, Syn. Car. 1027.

690. 86. T. *sulphurea*, F. 452, n. 6, Syn. Car. 1052, valde varians, etiam Bethlehem frequens e

691. 87. T. viticola, L. v. S., Syn. Car. 1037, Elench. p. 205, n. 6 b. rarius etiam in Vitibus Bethlehem.

*692. 88. T. *lactea*, F. 452, n. 7, freq. (Syn. Car. 1058 et 1059, alia) nostra Bethl. Hyp. candidis.

693. 89. T. *laevis*, F. 451, n. 1, Syn. Car. 1026, etiam passim Bethlehem.

694. 90. T. *anthochroa*, Elench. F. p. 207, n. 9, Syn. Car. 1031. T. *roseo-carnea*, ad ligna et. Bethl.

*695. 91. T. *odorata*, Elench. p. 207, F. Syn. p. 445, rara ad truncum, Hamburg, Berks County, *alatacea* mihi olim.

*696. 92. T. *setigera*, Elench. F. p. 208, n. 12, passim Bethl. in cortice Betularum dejecto.

697. 93. T. *bombycina*, Elench. p. 211, n. 13, T. *sera*, Syn. Car. 1057, passim et. Bethlehem.

*698. 94. T. *papillosa*, Elench. F. p. 212, n. 14, Bethlehem, olim perperam ad T. *nudam*.

Subtrib. 3. *Ceraceae.*

*699. 95. T. *gigantea*, Elench. F. p. 213, n. 1, Mauch Chunk, et. Hamburg, Berks, ad trunc. pineos.

700. 96. T. *incrustans*, F. 448, n. 27, et sebacea 1038 et 1040, Syn. Car. etiam Pennsylvania; saepe gramina viva induit crusta var. *sebacea*. Huc etiam Merisma serratum, Pers. Synops. nec nostrum.
701. 97. T. *calcea*, F. Elench. p. 215, non Syn. Car. ad truncos pineos et ligna fabrefacta, Bethl.
*702. 98. T. *pubera?* Elench. p. 215, n. 3, (Conioph. corticalis, L. v. S., olim) in cortice Laricis, Bethl.
*703. 99. T. *mollis*, F. 443, Bethlehem rarius occurrit.
*704. 100. T. *alnea*, F. 446, n. 20, Bethl. late expansa, olim T. ochracea nostra.
705. 101. T. *ochracea*, F. n. 19, Syn. Car. concentrica, 1034, et. Bethlehem.
706. 102. T. *concentrica*, F. Elench. p. 217, Salem et Bethl. vix mera varietas prioris.
707. 103. T. *granulosa*, F. 446, n. 18, Syn. Car. 1036, etiam frequens Bethlehem.
708. 104. T. *mucida*, Elench. p. 217, n. 8, olim nobis T. aurantia, Syn. Car. 1033, non Bethlehem.
709. 105. T. *serialis*, F. 445, n. 16, olim perperam nobis T. anthochroa, Salem et. Bethl.
*710. 106. T. *livida*, F. 447, n. 24, Bethlehem in Pyromalo.
711. 107. T. *viscosa*, F. p. 448, n. 25, Syn. Car. 1056, solum. Salem.
*712. 108. T. *confluens*, F. 447, n. 23, Bethlehem bona species.
*713. 109. T. *comedens*, F. n. 21, praesertim in Syring. Bethl. et ex Surinamo.
714. 110. T. *incarnata*, F. 444, Syn. Car. 1022. Fungus admodum vulgaris et multum varians. Praesertim in dejectamentis, frustulis ligni caesi, imo in laqueo putrescenti, tamen etiam in cortice.
*715. 111. T. *nuda*, F. n. 22, freq. Bethl. praesertim in castaneis lignis et cortice castaneo.
716. 112. T. *cinerea*, F. 453, Syn. Car. 1055, vulgatissima, et. Bethlehem.
*717. 113. T. ALBIDO-CARNEA, L. v. S., passim in cortice Vitis obvia, Bethlehem.
T. subceracea, arctissime adnata, longissime confluens sed valde angustata, ambitu byssino fibrilloso candido, pruina carnescente centro tecta. Siccitate rimosa.
718. 114. T. *polygonia*, F. p. 444, n. 11, Syn. Car. 1024, et. Bethlehem freq.
719. 115. T. *Ribesia*, F. p. 444, in nota. Freq. Bethl. in ramis Ribis.

Subtrib. 4. *Lejostroma.*

720. 116. T. *acerina*, F. 453, n. 1, Syn. Car. 1060, et. Bethl.
*721. 117. T. *corrugata*, Elench. F. p. 224, n. 2, ad ramos salicinos Bethlehem, olim Stereum salicinum nobis.
*722. 118. T. *laevigata*, Elench. F. n. 3, Bethlehem, olim nobis Stereum umbrinum et badio umbrinum.
*723. 119. T. EPISPHAERIA, L. v. S., Elench. F. p. 226, n. 3 b. praesertim in Lauro et Alno ligno et supra Sphaeriam stigma, olim nobis Hydnum et tum ad Sterea nostra.
*724. 120. T. *maculaeformis*, F. 454, n. 4, Bethlehem.
725. 121. T. *bufonia*, F. Elench. p. 225, n. 4 b. Pers. Synops. 578, Syn. Car. 1044.
*726. 122. T. *amphibolia*, F. 454, n. 5, Bethlehem.
*727. 123. T. *epidermea*, Pers. Myc. p. 84, Elench. F. p. 226 in nota, Bethlehem. Huc pertinet.
728. 124. T. *circinnata*, Elench. F. p. 226, n. 7. *Sarcopodium*, Link. p. 127. Omnino nostra (quae olim Th. *herbarum* nobis audit) ad Thelephorus pertinet.

ORDO II. ELVELLACEI.

SUBORDO 1. MITRATI.

Genus 18. MORCHELLA.

729. 1. M. *esculenta*, F. n. 1, Syn. Car. 1125, vulgaris et saepe maxima, etiam Pennsylvania.
730. 2. M. FORAMINULOSA, L. v. S., Syn. Car. 1126, patula, rarior inter priorem Carolina, omnino non est M. patula, Fries.
M. affinis priori ac ejusdem indolis. Pileo tamen magis ovato quam conico, apice foramine aperto, margine subannubiformi. Basis pilei stipite adnata cum in priori. Ad tres uncias elevatur.
*731. 3. M. *carolliniana*, Bos. F. n. 13, ex New York accepi, et in Pinetis juxta Philad. ipse inveni.

Genus 19. Helvella.

732. 1. H. costata, L. v. S., Syn. Car. 1127, F. p. 19, n. 7, rara, ac solummodo Carolina inventa.
733. 2. H. *infula*, F. n. 5, Syn. Car. 1128, vere in Carolina.
*734. 3. H. *lacunosa* (mitra), F. 15, passim Salem et Bethl.
*735. 4. H. *sulcata*, F. 3, Salem rara.
736. 5. H. *esculenta*, F. 4, Clariss. Torrey mihi ex New York communicavit.

Genus 20. Verpa.

*737. 1. V. caroliniana, L. v. S., Syn. Car., perperam Leotia marcida, n. 1123. Rara Carolina in declivitatibus.

V. stipite longo, biunciali, flexuosim torto, apicem versus incrassato, cavo, subcarnoso, rugoso-plicato. Pileo dilatato, subagaricoideo, rugoso-tuberculoso, margine arcte in stipitem inflexo, ex pallido umbrino. Subtus et in stipite color pallidior.

Genus 21. Leotia.

738. 1. L. *circinnans*, F. p. 27, n. 3, Syn. Car. 1120, Salem.
739. 2. L. *lubrica*, F. n. 7, Syn. Car. 1122, etiam Bethl.
740. 3. L. chlorocephala, L. v. S., F. 8, Syn. Car. 1124, solummodo in Carolina obvia.
*741. 4. L. *viscosa*, F. 9, Salem et Bethl., non rara.
742. 5. L. *infundibuliformis*, F. p. 26, n. 1, ex New York mihi communicata.

Subordo II. CUPULATI.

Genus 22. Rhizina.

743. 1. R. *undulata*, F. p. 33, n. 1, solummodo mihi obvia sed elegans in sylvis istis vastissimis Abietinis, Jefferson County, Pennsylvania, Octob.

Genus 23. Peziza.

Series 1. *Aleuria.*

Trib. 1. Helvelloideae.

† *Acetabula.*

*744. 1. P. *sulcata*, F. p. 44, ad latera truncorum Nazareth.
745. 2. P. cinnamomeo-lutescens, L. v. S., Syn. Car. 1165, F. p. 45, nondum in Pennsylv. obvia.
746. 3. P. Mitrula, L. v. S., Syn. Car. 1184, F. 45, rara, sed etiam Bethlehem.

†† *Cochleatae.*

747. 4. P. clypeata, L. v. S., Syn. Car. 1170, F. p. 46, n. 9, nondum Pennsylvania.
748. 5. P. *venosa*, F. 46, n. 10, Syn. Car. 1169, et. Bethl.
749. 6. P. *badia*, F. n. 11, Syn. Car. 1168, ex New Jersey, etiam habeo.
750. 7. P. *onotica*, F. n. 15, Syn. Car. 1163, rarissima.
*751. 8. P. obtecta, L. v. S., Salem rara inter folia putrescentia, et. Bethl.

P. minor, ½ uncialis, vix stipitata, sed ime concava et uno latere aperta aut subdimidiata, cinnamomea extus farinosa, basi albo-tomentosula aut albo-pruinosa. Gregatim ac sparsim foliis fere obtecta.

752. 9. P. *aurantia*, F. n. 16. Bethlehem frequens, Syn. Car. 1164.
753. 10. P. *cochleata*, F. 19, umbrina, Syn. Car. 1166, etiam passim Bethlehem.

††† *Pustullatae.*

754. 11. P. *vesiculosa*, F. 23, Syn. Car. alutacea, 1167, etiam Pennsylvania in stercoratis.
755. 12. P. CONCRESCENS, L. v. S., Syn. Car. 1178, haec species distinctissima quibusdam annis frequens locis raris Bethlehem, v. c. in sylva Jones.
*756. 13. P. *micropus*, F. 27, passim Bethlehem, Syn. Car. 1173.
757. 14. P. *pustullata*, F. 29, Bethl. et ex New York, Torrey, Syn. Car. 1179.
*758. 15. P. *bufonia*, F. n. 26, magna Bethlehem in sylva riparum Lehigh.
759. 16. P. IRREGULARIS, L. v. S., omnino foliis obtecta, ramulis dejectis udis, increscit Bethlehem copiose locis suis.

P. epixyla, subsessilis aut basi stipiteformi praedita, ramos putridos penetrante, proveniens fasciculatim cupulis magnis semiuncialibus et ultra, ampliatis repandis et irregulariter lacerato-fissis. Hymenio umbrino glabro. Extus rugulosa, versus basin lacunoso-venosa, dense verruccis conicis parvis, umbrino-ferruginosis aut subpurpurascentibus submollibus obsita. Caespites efformat 2—3 unciales. *Mycogone cervina* saepissime obtecta, reperitur.

Trib. 2. GEOPYXIS.

* *Macropodes.*

760. 17. P. *macropus*, F. 34, Syn. Car. 1177, etiam freq. Bethl.
761. 18. P. *Tuba*, F. 36, Syn. Car. 1174, *perennis*, Bethlehem mihi obvia, rarius in tuberibus.

** *Cupulares.*

762. 19. P. *latinus*, F. 44, Syn. Car. *varia*, 1172, nondum Pennsylv.
*763. 20. P. CARBONARIA, F. 45, locis carbonaceis, Bethl.
764. 21. P. *cupularis*, F. 46, Syn. Car. *crenata*, 1180, et. Bethlehem.
*765. 22. P. *applanata*, F. 50, Bethlehem rara.
766. 23. P. *violacea*, F. 52, Syn. Car. 1171, solummodo Carol.
*767. 24. P. *granulata*, F. 53, in stercore, Salem Carolinae.
*768. 25. P. *membranacea*, F. 48, Bethlehem rara p. Jones.
*769. 26. P. *diluta*, F. 49, eisdem locis Bethlehem.
*770. 27. P. *fuliginea*, F. 51, ripis Lehigh abruptis sylvaticis.

Trib. 3. HUMARIA.

771. 28. P. *rutilans*, F. 62, Syn. Car. 1238, *leucoloma*, Salem.
*772. 29. P. *fulgens*, F. 61, ex Deerfield, Massachusetts communicata.
*773. 30. P. *ollaris*, F. 63, Salem et Bethlehem.
*774. 31. P. *arancosa*, F. 67, rarissime obvia Nazareth.
*775. 32. P. *humosa*, F. 72, in Pine Swamp Pennsylv. rara.
*776. 33. P. *leucoloma*, F. 71, Bethlehem inter muscos.
777. 34. P. *omphalodes*, F. 78, *confluens*, Syn. Car. 1240, nondum Pennsylv.
778. 35. P. *rubricosa*, F. 73, Syn. Car. 1241, *rufa*, ad terram in Carolina.

Series 2. Lachnea.

Trib. 1. SARCOSCYPHAE.

1. *Stipitatae.*

*779. 36. P. *coccinea*, F. p. 79, n. 1, Bethlehem in sylva occidentale.
*780. 37. P. *tomentosa*, F. n. 3, ligno dejecto adhaerens Carolina.
*781. 38. P. OCCIDENTALIS, L. v. S., ad Muskingum in Ohio ad stipites dejectos et ramulos mense Augusto.

P. longiuscule stipitata, stipite teneriori, cupula subinfundibuliformi, tota coccinea; extus villo brevi albidulo subtomentosa. Disco luteo coccineo. Basis stipitis tomento candido involuta—Interdum

sessilis occurrit, plerumque stipite subunciali. Omnibus partibus gracilior est P. *coccineae*. Sparsim crescit.

*782. 39. P. FLOCCOSA, L. v. S., ad terram et ad ramulos in terra defoss. Nazarethi.

P. longissime stipitata, fasciculatim crescens ; stipite subflexuoso sursum in cupulam tubaeformem sensim dilatato. Cupula ime tubaeformis, limbo dilatato, colore externo lutescenti coccinea, cum stipite strigosissime floccosa, tomento longo recto candido, omnino obtegente cupulam, stipitemque sarcosum. Disco eleganter coccineo, nudo. Tota unciam altitudine excedit, gracilis, et pulcherrima est.

2. *Sessiles.*

783. 40. P. *nigrella*, F. n. 7, Syn. Car. 1186, freq. et Bethl.

784. 41. P. *hemisphaerica*, F. n. 11, Syn. Car. 1185, et. Bethl.

785. 42. P. *brunnea*, F. 12, Syn. Car. 1187 et. New York missa.

3. *Ciliares.*

*786. 43. P. *carneorufa*, F. 17, rarissime obvia Bethl.

787. 44. P. *scutellata*, F. 19, Syn. Car. 1195, et. Pennsylv. freq.

788. 45. P. ERINACEUS, L. v. S., F. 20, Syn. Car. 1194, praesertim in putridissimis Juglandis truncis et. Bethl.

*789. 46. P. *setosa*, F. 25, rarior Bethl. ad cariosos truncos.

*790. 47. P. *stercorea*, F. 26, Syn. Car. 1196, in fimo praesert. vaccino, Pennsylvania et New York.

791. 48. P. *thelebolvidea*, F. 28, in horto stercorato solummodo Carolina, Syn Car. 1197.

*792. 49. P. *diversicolor*, F. 29, huc referenda est Peziza lurida nobis olim nec tamen Syn. Car. 1239.

793. 50. P. *papillata*, F. 30, Syn. Car. 1198, et passim in fimo Pennsylv.

Trib. 2. DASYSCYPHAE.

1. *Stipitatae.*

794. 51. P. *ciliaris*, F. 33, Syn. Car. 1209, freq. et. Bethlehem.

795. 52. P. *virginea*, F. 34, Syn. Car. 1208, freq. et. Bethl., β var. *carpophila* vulgatissima in glandibus ibid.

*796. 53. P. *nivea*, F. 35, Bethlehem rara in ramulis.

797. 54. P. *patula*, F. 37, Syn. Car. 1210, Bethl. et lignatilis.

798. 55. P. *calycina*, F. 38, Syn. Car. 1207, vulgaris Bethl.

*799. 56. P. OCHRACEA, L. v. S., nitidissima in ligno pineo. Kaign's Point, Philad.

P. major quam *virginea*, eleganter ochracea ; extus villosa villis concoloribus. Stipite mediocri. Cupula dilatata, primum contractim subclausa. Disco vivide ochraceo. Gregibus vastis lignum non corruptum occupat.

*800. 57. P. *bicolor*, F. 39, in frustro pineo ibidem.

*801. 58. P. *cerinea*, F. 40, rarior Salem et Bethl.

802. 59. P. *sericea*, F. 43, Syn. Car. 1211, nondum Pennsylv.

*803. 60. P. *clandestina*, F. 44, Salem et Bethl.

*804. 61. P. *calyculaeformis*, F. 43, ligno putrido Bethl.

*805. 62. P. *caulicola*, F. 45, albo-marginata, Bethl.

*806. 63. P. *armeniaca*, F. 46, ad caules ut prior, Bethl.

807. 64. P. *fuscescens*, F. 47, Syn. Car. 1212, fol. fagineis et aliis etiam Bethlehem.

*808. 65. P. STIPITICOLA, L. v. S., in stipitibus dejectis Bethlehem.

P. minuta, subsparsa, substipitata, cupulis globoso-turbinatis in stipitem crassum abientibus, primum clausis, extus farinaceo-pubescentibus, margine albescentibus, pilis ceterum cervinis ; disco pallido.

*809. 66. P. *plagopus*, F. 41, in ligno vetusto, Bethl.

*810. 67. P. PROLIFICANS, L. v. S., in disco caeso ramorum et truncor. Salem.

P. minuta, stipite brevi crassiusculo, subfasciculata, sicca clausa et sphariaemorpha, extus aeruginoso-farinacea, pubescens. Uda, aperta, disco atroviride, saepe prolificante, i. e. cupula in cupula crescenti. Limbo plerumque undulato, margine tumido.

*811. 68. P. SPHAERINCOLA, L. v. S., increscens Sphaeriis pulvinatis, Bethl.

P. minutissima, turbinata, sparsa et gregaria, extus strigosa, brunnea, in margine albescens, stipite brevi brunneo crasso. Disco brunneo.

*812. 69. P. LUTEO-ALBA, L. v. S., ad corticem, Bethl.
P. minuta, stipite gracili, in cupulam latiusculam expanso, extus cum cupula luteo villoso. Disco aperto candido.
*813. 70. P. TURBINULATA, L. v. S., rimis corticalibus Castaneae.
P. stipitata, gracilis, sparsa, turbinata, extus eleganter sulphurea, pilosa. Stipite versus basin subnudo subsulcato. Disco viride aurantio-rubro. Vix semilineari altitudine.
*814. 71. P. SUBHIRTA, L. v. S., epiphylla, Bethlehem.
P. minutissima, substipitata, sparsa, lutea, extus minutim hirsuta cupula dilatata.

2. *Sessiles.*

815. 72. P. *alboviolascens*, F. 49, Syn. Car. 1206, et. Bethlehem.
816. 73. P. *corticalis*, F. 50, Syn. Car. 1202, et. freq. Bethl.
817. 74. P. CINEREOFUSCA, L. v. S., F. 52, Syn. Car. 1192, passim et. Pennsylv.
*818. 75. P. *hispidula*, F. 58, in Sambuco, Salem et. Pennsylv.
*819. 76. P. *Schumacheri*, F. 59, disco caerulesc. in Spiraea, Bethl.
*820. 77. P. *spadicea*, F. 60, ad ligna Bethlehem.
821. 78. P. *rufo-olivacea*, F. 63, ad Rubos rara Bethl. et Salem.
822. 79. P. *flavo-fuliginea*, F. 64, Syn. Car. 1190, et. Bethl.
*823. 80. P. *variecolor*, F. 65, ad stipites Salem obvia.
*824. 81. P. *episphaeria*, F. 67, ad Sph. adustam Bethl.
*825. 82. P. *roscola*, F. 68, passim Bethl. ad caules.
826. 83. P. LEONINA, L. v. S., F. 70, Syn. Car. 1200, et. Bethlehem.
827. 84. P. FULVO-CANA, L. v. S., F. 71, Syn. Car. 1201, et. Pennsylv.
*828. 85. P. *papillaris*, F. 73, Bethlehem.
829. 86. P. PENICILLATA, L. v. S., F. 74, Syn. Car. 1204, et. Bethl.
830. 87. P. *hyalina*, F. 75, Syn. Car. 1214, freq. et. Bethl.
831. 88. P. *strigosa*, F. 76, Syn. Car. 1188, in caulibus umbell.
*832. 89. P. *relicina*, F. 78, in caulibus Pastinacae, Bethl.
833. 90. P. *sulphurea*, F. 80, Syn. Car. 1189, et. Bethl. ad caules.
*834. 91. P. *villosa*, F. 82, freq. Bethlehem ac Salem.
*835. 92. P. *grisea*, Pers. Myc. Bethl. lignis, bona species.
*836. 93. P. *corvina*, F. 56, rara Bethl.
*837. 94. P. *triformis*, F. 69, in ligno Rhois, Bethl.
*838. 95. P. *virescens*, F. 81, in variis caulibus, Bethl.
*839. 96. P. *punctiformis*, F. 85, ad fol. Castaneae, Bethl.
840. 97. P. CINNABARINA, L. v. S., Syn Car. perperam *flammea*, *n*, 1193, ad Liquidambaris ligna, Salem.
P. sessilis, globosa, strigoso-pulverulenta, unicolor, cinnabarina, basi latiusculo nigrescente, rarius disco aperto. Tota pulvere cinnabarino copiosim tecta. Gregarie crescit, vix 1½ lineas diam. excedens.
*841. 98. P. COMATA, L. v. S., epiphylla in foliis quercinis dejectis, Bethl.
P. minutissima, sessilis, candidissima, extus pilis longis densis candidis eleganter comata. Sparsa.
*842. 99. P. INCARNESCENS, L. v. S., ad ligna decorticata varia, Bethl.
P. sessilis, gregaria, 1—2 lin. lata, orbicularis, extus nigro-umbrina, pilosula strigosa, margine dilutiori, subclausa, sicca, madefacta, expansa. Disco eleganter incarnato.
*843. 100. P. VITIS, L. v. S., rimis Corticis Vitis, Bethl.
P. minuta, difformiter globosa, clausa, carnea, sed villo albo extus laxius involuta, margine crenulato-plicato; disco pallido. Punctiformis.
*844. 101. P. FUSCOBARBATA, L. v. S., in antiquissimis caulibus Verbasci, Bethlehem.
P. patellaeformis, extus duriuscula et in basi nigricans, 1—2 linearis; in margine densim fusco-barbata. Disco eleganter carneo. Sparsa. Siccitate clausa. Cupula extra barbam nuda rugosa.
*845. 102. P. RUFIBERBIS, L. v. S. in plurimis stipitibus teneris dejectis, Bethl.
P. applanato-patellaeformis, siccitate ob cupulae teneritatem irregulariter contracta, ceterum orbicularis, et madefacta valde explanata, rubella, carnosa, extus fasciculis pilorum brevium ruforum eximie barbata. Lin. 1—2 diametro; gregatim crescens.

*846. 103. P. MACULINCOLA, L. v. S., in maculis determinatis albidis, omnino tamen non crustaceis, in lignis decorticatis ramorum aggregata, Bethlehem.

P. gregaria, affinis P. flammulae et cinnabarinae, lineam diametro excedens, sessilis, basi nigra nuda rugosa, versus marginem strigosissima, tomento strigoso ferrugineo rufo, subpulverulento. Disco primum clauso, tum Peziza globosa ; demum aperto, carneo-rufo. Cupulis in macula subconcentricis.

*847. 104. P. EUPATORII, L. v. S., versus radices in maximis caulibus emortuis Eupatorii purpurei et maculati, Bethl.

P. gregaria, cupulis bi- vel tri-linearibus ; madefactis explanatis, disco subconvexo, margine fere obliterato. Siccitate connivens, sed non clausa, est haec pezizula rufo-carnea, extus pilis nigrofuscis, apice albescentibus fasciculatim obsita.

*848. 105. P. ATROFUSCATA, L. v. S., in frustulis ligni dejecti. Bethlehem.

P. sparsa, majuscula (pro ratione) diametro lineari. Cupula sessilis, extus statu sicciori atra, rugosa orbiculata, interdum tantum in margine barbata, plerumque extus fusco-strigosa.

Trib. 3. TAPESIA.

* *Cupulis villosis.*

849. 106. P. *anomala*, F. 86, Syn. Car. 1215, et. Bethl.

*850. 107. P. *annulata*, F. 87, rarius Bethl. ad ligna.

*851. 108. P. *stipata*, F. 88, non infreq. ad ligna Bethl.

*852. 109. P. *poriaeformis*, F. 89, rara sed distincta, Salem.

*853. 110. P. *caesia*, F. 93, Salem et Bethl. obvia.

*854. 111. P. *Rosae*, F. 97, Salem, rarissima in Rosa.

855. 112. P. PRUINATA, L. v. S., F. 96, Syn. Car. 1216, etiam Bethlehem obvia in Vite.

856. 113. P. HYDRANGEAE, L. v. S, F. 98, Syn. Car. 1219, nondum Pennsylvania reperta.

*857. 114. P. DAEDALEA, L. v. S., in cortice Lauri aestivalis, rara Bethlehem.

P. crustacea, insidens subiculo pulverulento crustaceo, crassiusculo, secedente, expanso in ligno ac cortice. Cupulis dense gregariis, majusculis sessilibus daedaleis, i. e. varie tortis et flexuosis, invicem adpressis, cum subiculo concolore, cinereo-pulverulentis. Disco fuligineo-cinereo.

*858. 115. P. ARACHNOIDEA, L. v. S., in lignis dejectis udis, Bethlehem

P. subiculo ex filis arachnoideis longe lateque expansis tenerrimis, intertextis, subcandido-cinereis. Cupulis pallido-aquosis, extus villoso-albis, minutissimis. Siccitate globoso-contractis fere imperceptibilibus.

*859. 116. P. CANDIDO-FULVA, L. v. S., rara sed perpulchra in cortice Bethl.

P. subiculo araneoso satis denso, longe lateque effuso, candidissimo, in quo sparsae apparent cupulae 1—2 lineares, elegantissime fulva, extus pilis brevibus subfasciculatis fusco-fulvis ornatae. Affinitatem cum P. fulvocana habet—sed differt subiculo.

** *Cupulis glabris.*

860. 117. P. *fusca*, F. 99, Syn. Car. 1217, et Bethl. freq.

861. 118. P. *sanguinea*, F. 102, Syn. Car. 1218, valde freq. Bethl.

*862. 119. P. SUBICULATA, L. v. S., passim in ramis dejectis Bethl.

P. subiculo crasso, tomentoso, effuso cinereo-fusco, densissime intertexto. Cupulis glabris, marginatis et fibris quasi radicantibus, albis, sub nudo margine radiatim expansis, subiculo affixis ; majusculis, in ambitu mire lobato-undulatis, tri-linearibus ; disco ochraceo.

*863. 120. P. GRISEO-PULVERACEA, L. v. S., affinis priori—locis similibus inventa, Bethl.

P. subiculo araneoso multo tenuiori griseo. Cupulis minoribus, extus nigris, margine tumidulo non lobato, griseo-pulverulento ; disco ochraceo etiam pulverulento.

*864. 121. P. MOLLISIAEOIDES, L. v. S., locis iisdem cum prioribus Bethl.

P. subiculo tenui, tomentum byssinum effusum referente, nigrofuscescente. Cupulis sparsis sub-diaphanis, omnino P. mollisiam referentibus, tenerrimis, majusculis, nullimodo extus villosis sed subrugusis, cinereis statu madefacto sicco autem nigris. Disco concolore.

*865. 122. P. DISCINCOLA, L. v. S., in disco caesi trunci ad ligna. Subaffinis P. anomalae, Bethl.

P. minuta aggregata, in subiculo tenuissimo albescenti. Cupulis turbinatis, substipitatis, laxe stipatis,

pallide ferrugineis, extus tamen omnino tectis pilis albido-cinereis, pulverulentis ; primo conniventibus, demum irregulariter expansis. Disco pallido.

*866. 123. P. MEGALOMA, L. v. S., in lignis putridis passim Bethl.

P. subiculo late effuso, atro, contexto ex filis crassiusculis. Cupulis majusculis, elevatis, subrotundis, ceraceis, ex lutescente albidis, margine crasso involuto subrepando. Disco cinereo. Extus cupulis glabris aut subfurfuraceis.

Trib. 4. FIBRINA.

*867. 124. P. *clatina*, F. 106, rara in Pino canadens. Salem.

868. 125. P. *bolaris*, F. 107, Syn. Car. 1221, et. Bethlehem.

869. 126. P. ROSEO-ALBA, L. v. S., F. 113, Syn. Car. 1244, et. Bethlehem.

*870. 127. P. *ceracella*, F. 114, rara in cortice, Bethlehem.

*871. 128. P. *phacidioides*, F. 116, ad stipites rara, Bethl.

872. 129. P. CHLORA, L. v. S., F. p. 115, b. Syn. Car. 1235. Species ex optimis—frequens occurrit in interioribus truncis, maxime gregaria, et aetate nigrescit, saepe 1—2 lin. diametro. Etiam Pennsylv.

*873. 130. P. CHLORASCENS, L. v. S., affinis priori sed major et colore alieno, locis similibus sed rarius occurrit, Bethl.

P. majuscula (3—4 linearis) gregaria, sicca valde contorta, sessilis aut brevius stipitata; extus floccosa fibrosa, nigra aut nigrofusca statu sicciori—madefacta autem aeruginosa. Disco lato chlorascenti aut luteo-viridi, demum subpulverulento.

*874. 131. P. SOLITARIA, L. v. S , rarissime insidens stipitibus tenerrimis Bethl.

P. sessilis, solitaria, majuscula ad 3 lin. lata, applanata, firma, crassa, margine tumido obtuso glabro, colore chalybeo ; disco undulatim inaequali. Cupula extus vestita fibris quibusdam paucis albescentibus.

*875. 132. P MEMBRANATA, L. v. S., rara, ad ligna dejecta, Bethlehem.

P. submembranacea, extus rugulosa fibris adpressis. Tota nigra, statu sicciori. E stipite longiusculo abiens in cupulam tubaeformem, irregulariter limbo lobatam, intus cinerascens. Statu madido—tota Peziza cinerascit. Affinis Merulio aut pot. Cantharella fissili.

*876. 133. P. TORTA, L. v. S., affinis P. bolari. Rara obvia lignis vetustis, Salem.

P. subfasciculata, aut sparsa; stipite crasso sulcato, torto ferrugineo-fusco aeque ac cupula extus Disco explanato undulato, immarginato, aeruginoso-viridi, pulverulento. Substantia demum sub coriacea. Totus fungus a 4 lineas latus et altus.

*877. 134. P. ASCOBOLOIDEA, L. v. S., in rimis corticis Vitis labruscae, &c. Bethlehem.

P. minutissima, sparsa, extus fibrosa, candida, turbinata carne, sed vix stipitata. Disco subcarneo quasi ascis ascoboloideis punctato, subconvexulo, siccitate clauso. Vix semilineam excedit.

*878. 135. P. LENTAGINIS, L. v. S , in ramis Viburni Lentaginis, Hope, Jersey, vulgata.

P. gregaria, sed sparsim, brevistipitata, stipite tenuiusculo concolore. Cupula dilatata, extus tenuissime fibrosa badia, subpulverulenta. Disco rotundo aut flexuoso marginato, pallide fusco badio. Tota 1—2 linearis.

*879. 136. P. OPULIFOLIAE, L. v. S., frequens in emortuis ramis, Spiraeae opulifol. Bethl.

P. sessilis, sparsa, egloboso-turbinata, regularis, margine tumido inflexo; brunnea, extus fibroso-striata, margine albescenti. Disco pallido. Diametro 1 lineari. Copiosim provenit in ramulis.

*880. 137. P. VIXVISIBILIS, L. v. S., in fibris interioribus Corticis Castaneae Bethl.

P. minutissima, subfasciculatim proveniens circum Sphaeronema parabolicum in eisdem fibris crescentem; fusca, subfibrillosa, obconica, abiens in stipitem brevem, margine albo pruinoso involuto. Disco cinereo-fusco ascigero. Ore semper contracto. Vix nisi per lentem detegenda.

Series 3. *Phialea*.

Trib. 1. HYMENOSCYPHAE.

† *Ciborioideae.*

*881. 138. P. *echinophila*, F. n. 4, in involcuris Castan. Bethl.

882. 139. P. *firma*, F. n. 1, Syn. Car. 1222, et. Bethl.

*883. 140. P. *fructigena*, F. 5, in Juglandium fruct., Bethl.

884. 141. P. *serotina*, F. 6, Syn. Car. 1225, non in Pennsylv.

885. 142. P. *lutescens*, F. 8, Syn. Car. 1228, foliis, et. Bethl.
*886. 143. P. *pyriformis*, F. 13, Salem in muscis rarissima.
*887. 144. P. *clavata*, F. 16, Bethl. freq. in cortice Robiniae.
888. 145. P. *eyathoidea*, F. 21, Syn. Car. 1227, passim etiam in caulibus, Bethlehem.
889. 146. P. *coronata*, F. 9, rarissima, obvia tamen Salem ac Bethl. in stipitibus.
*890. 147. P. *striata*, F. 15, ad caules Bethl.
*891. 148. P. *campanula*, F. 19, in caulibus Umbellatarum, jam Salem et Bethl.
*892. 149. P. *Capula*, F. 20, ad dejectos stipites Bethl.
*893. 150. P. *Perula*, F. 23, ad stipites Bethl.

†† *Volutelleae.*

*894. 151. P. *vaccinea*, F. 27, ad fimum rarius obvia.

Trib. 2. Calycinae.

† *Calyculae.*

895. 152. P. *Buccina*, F. 35, Syn. Car. 1223, rara etiam Bethl.
*896. 153. crocea, L. v. S., ex New York communicavit Dr. Torrey.
P. subcorneo-indurata, crocea, fasciculata, stipite crasso sulcato incurvo. Cupula varie contorta et lobata, margine obtuso subflexuoso. Altitudine ¾ unciali. Cupula diametro bilineari.
*897. 154. P. *Phiala*, F. 36, ramulis et stipitibus, Bethl.
*898. 155. P. *Calyculus*, F. 37, rara var. infundibuliformis ad ligna Bethl.
899. 156. P. *aeruginosa*, F. 39, Syn. Car. 1230. Vulgatissima et interdum maxima Bethlehem.
*900. 157. P. *versiformis*, F. 40, Bethl. in salicinis truncis.
*901. 158. P. *Aspegreenii*, F. 41, Bethlehem ad ligna.
902. 159. P. *citrina*, F. 43, Syn. Car. 1231. Vulgatissima et maxima Bethl.
*903. 160. P. confluens, L. v. S., affinis priori, sed multo major passim Bethl.
P. majuscula, saepe plagis uncialibus et ultra confluens, ita ut cupulae confluentes quasi membranam efficiunt. Stipitibus crassiusculis, brevibus albescentibus cum cupulis ad basin, ceterum vivide citrinis, subtus pallidioribus.
904. 161. P. *pallescens*, F. 44, Syn. Car. 1232, et. Bethl. optime in caulibus Pastinacarum basin versus.
905. 162. P. *nigripes*, F. 45, Syn. Car. 1226, etiam Pennsylv.
*906. 163. P. *chionaea*, F. 44, b. optima Nazareth ad ligna.

†† *Lenticulares.*

907. 164. P. *lenticularis*, F. 46, Syn. Car. 1236, et. Bethl.
*908. 165. P. *salicella*, F. 47, rarior, Hope, Jersey.
*909. 166. P. *tricolor*, F. 49, Bethlehem in truncis rara.
*910. 167. P. *ferruginea*, F. 51, Salem in trunci disco.
*911. 168. P. *disciformis*, F. 52, rarissima ad truncos, Bethl.
*912. 169. P. *cupressina*, F. 54, ad folia et ramulos Juniperi virginicae dejectae Bethlehem passim.
*913. 170. P. *imberbis*, F. 57, rarior ad ligna Bethl.
914. 171. P. *herbarum*, F. 58, Syn. Car. 1233, et. Bethlehem vulg.
*915. 172. P. *faginea*, F. 59, rarissima in foliis Bethl.
916. 173. P. *epiphylla*, F. 60, Syn. Car. 1243, Salem ac Pennsylvania.
*917. 174. P. *luteovirens*, F. 48, ad ligna Bethlehem.
*918. 175. P. *Mougeotii*, F. 53, rara sed pulchra Bethl.
*919. 176. P. Pastinacae, L. v. S., in caulibus exsiccatis duris Pastinaeae Bethl.
P. minuta, stipite brevissimo crasso, interdum sessilis; cupulis sparsis apertis, margine tumidulo obtuso albescenti luteo. Disco subconvexulo rufo lutescente. Affinis P. herbarum.
*920. 177. P. Leguminum, L. v. S., rara sed distincta species sparsim occurrit in leguminibus, Bignoniae Catalpae et radicantis, Bethl.
P. minuta, sparsa, emergens, globosa, ceracea, sessilis, glabra, rufa. Disco excavato concolori, margine albescenti. Punctiformis apparet.

Trib. 3. Mollisia.

† *Claviformes.*

*921. 178. P. *conigena*, F. 65, conis Pinorum prope Philad.
*922. 179. P. *flavovirens*, F. 66, rara in putrido ligno Bethl.

†† *Udae.*

923. 180. P. *chrysocoma*, F. 67, Syn. Car. 1159, aurea, et. Bethl.
*924. 181. P. *lilacina*, F. 68, non rara Bethlehem.
925. 182. P. *vinosa*, F. 69, Syn. Car. 1160, passim et. Bethl.
926. 183. P. *rubella*, F. 70, Syn. Car. 1162, freq. et. Bethl.
927. 184. P. *atrovirens*, F. 71, Syn. Car. 1163, freq. ibidem.
*928. 185. P. *olivacea*, F. 73, nostra occurrit in terra juxta truncos.
929. 186. P. *uda*, F. 74, Syn. Car. 1157, freq. ubique.
930. 187. P. *cinerea*, F. 75, Syn. Car. 1158, vulgatissima.
*931. 188. P. *pusilla*, F. 76, rarior ad truncos Bethlehem.
*932. 189. P. *Pteridis*, F. 79, passim ad stipites Pteridis aquif. Bethlehem.
*933. 190. P. *axillaris*, F. 83, in axillis muscorum ; Clariss. Torrey ex New York communicavit.
*934. 191. P. *sanguinolenta*, F. 84, non rara lignis Bethl.
*935. 192. P. *xanthostigma*, F. 86, in vetustis lignis Bethl.
*936. 193. P. *vulgaris*, F. 88, ad cortices putrid. Bethl.
*937. 194. P. *livido-fusca*, F. 90, rarior in fragmentis corticis dejectis Bethlehem.
*938. 195. P. *dilutella*, F. 91, rara obvia Bethl. locis suis.
*939. 196. P. *atrata*, F. 92, passim in exaridis lignis Bethl.
*940. 197. P. *leucostigma*, F. 87, ligno cariosissimo Nazareth.
*941. 198. P. *dentata*, F. 89, in ligno materie viridi obtecto, Bethlehem et alibi.
*942. 199. P. conchella, L. v. S., ad ramos dejectos Mori albae Bethlehem.
P. minutissima, conchiformis, sessilis, subpellucide rubra, sicca, connivens, margine acuto.
*943. 200. P. cruenta, L. v. S., in cortice ramorum passim Bethl.
P. minuta, sparsa, sessilis, applanata, cruenta, subpellucida, margine elevato albidulo crenulato, aut pruina adsperso. Disco concavo. Forma totius fungi orbiculata, vix semilineam excedens.
*944. 201. P. citrinella, L. v. S., in lignis cariosissimis salicinis Bethlehem.
P. gregaria ac sparsa, minuta, sessilis, junior subglobosa, demum explanata, semper margine crassiusculo obtuso distincta, varie flexuoso et linea albida notato. Ceterum unicolor citrinella—affinis P. chrysocomae.
*945. 202. P. rufula, L. v. S., satis affinis P. rubellae, sed major, ac minus tremellosa. Bethlehem lignis.
P. basi affixa, margine crasso subalbescente, ceterum e rubro rufa. Disco impresso, quasi umbilicato, limbo interdum undulato, plerumque regulariter orbicularis.

Trib. 4. Patelleae.

*946. 203. P. *melaxantha*, F. 97, passim Bethlehem.
947. 204. P. *melaleuca*, F. 88, Syn. Car. leucomela, 1247, et. Bethl.
*948. 205. P. *lignyota*, F. 100, rarior lignis Bethlehem.
*949. 206. P. *difformis*, F. 101, Nostra videtur major Friesii, in disco antiquo Salicis Bethlehem.
*950. 207. P. *viticola*, F. 102, rarior Betbl. in Vite.
*951. 208. P. *lecideola*, F. 103, passim Bethlehem obvia.
*952. 209. P. *connivens*, F. 104, in frustulis dejectis, Bethl.
*953. 210. P. *compressa*, F. 105, in fragmentis ligni caesi ad terram dejectis Bethlehem freq.
*954. 211. P. *flexella*, F. 107, ad varia ligna cariosa Bethlehem.
*955. 212. P. glandicola, L. v. S., gregatim provenit et subseriatim in glandibus putridis, Bethl.
P. minuta, nigrofusca, subcaespitosa et fasciculata, sessilis, margine plicato inflexo; disco concavo glabro. Quasi zonatim glandes circumdant greges densissimae hujus pezizulae, quae cupulis valde variant, difformibus saepe flexuosis et conniventibus. Disco interdum griseo-pulveraceo.
*956. 213. P. Philadelphi, L. v. S., in ramulis Philadelphi inodori culti in hortis Bethlehem.

P. cupulis sessilibus aut stipite papillaeformi praeditis; siccis subrotundis, sparsis, superficialiter epidermidi adnatis, extus ferrugineo lutescentibus, subpulverulentis, margine subprominulo. Disco demum convexo, punctato, umbrino, ½ lineari. Interdum cupuli aggregati occurrunt.

Genus 24. Ascobolus.

957. 1. A. *furfuraceus*, Fries. n. 3, Syn. Car. 1270, Carol.
958. 2. A. *glaber*, F. n. 7, Syn. Car., 1269, et. Bethl. in fimo.
*959. 3. A. *immersus*, F. n. 8, non rarus in fimo Bethl.
*960. 4. A. conglomeratus, L. v. S., in truncis quercinis mucidissimis copia ingenti aggregatus. Tam affinis Hysterio rufescenti nostro statu sicciori, ut vix distinguitur. Madido autem nil dissimilius.

A. cupulis sessilibus, majusculis, applanatis, varie flexuosis, saepissime aggregatis in caespitulis uncialibus. Disco cinereo carnoso-tremelloso, late aperto ad latitudinem 1—2 linearum, subtumidulo, ascis punctato-prominulis nigrioribus; margine tumido albescente. Sicco statu, valde mutatur, cupulis tum contractis, contortis, conniventibus, *Hysterium rufescentem* referentibus, disco toto nigro, margine albo, extus autem nigrescentibus. Ad ulnarem longitudinem confluunt caespites cupularum.

Genus 25. Bulgaria.

*961. 1. B. *globosa*, F. 166, n. 1, Salem et Bethlehem rariter obvia.
962. 2. B. *inquinans*, F. n. 2, Syn. Car. Pez. 1153, copiosissime et interdum maxima invenitur Salem et Bethlehem. Praesertim vulgata in lignis caesis ad ignem destinatis.
963. 3. B. *sarcoides*, F. n. 5, Syn. Car. Pez. 1156, freq. et. Bethlehem in Betula.
*964. 4. B. rufa, L. v. S., in ligno putrido Bethlehem hunc fungum rarius, sed tum maxima copia inveni.

B. magnitudine et substantia indoleque omnino B. *inquinantis:* forma autem magis Pezizoidea, breviter stipitata. Junioribus subturbinatis aut obovatis, clausis, vix autem velatis. Mox cupula dilatatur, margine undulato repando, disco, ascophoro, eleganter rufo. Extus umbrino-fusca, venoso-rugulosa, strigoso-pilosa, pilis tamen brevissculis. Statu madido attinet diametrum 2—3 uncialem, et colore laeto inter folia putrida oculos allicit; in sicco cornea et indurata sit mox autem reviviscens. Increscit more B. *inquinatae* lignis, putridioribus tamen, inter folia defossis.

Tribus 3. Claviculares.

Genus 26. Vibrissea.

965. 1. V. truncorum, F. p. 31, Syn. Car. 1121. Leotia, L. v. S., solummodo Carolina obvia.

Genus 27. Sarea. Fries. Sys. Veg. p. 86.

966. 1. S. *aurea*, F. II. p. 156, Helotium, n. 3, Syn. Car. 1272, elegans. Nondum Pennsylvania obvia.
967. 2. S. *acicularis*, F. n. 4, Syn. Car. 1271, et. Bethlehem in cortice.
968. 3. S. *fimetaria*, F. n. 5, Syn. Car. 1273, et. Bethlehem rarius locis similibus.
*969. 4. S. *subtilis*, F. n. 6, rarius. Bethl., Philad.
*970. 5. S. *pithya*, F. n. 1, in ligno et ramulis Pini canadensis, major et magis applanata quam Europaea species sed omnino eadem, Plainfield, Pennsylvania.
*971. 6. S. brassicaecola, L. v. S., in caulibus vetustis Brassicarum induratis Bethl.

S. gregaria, gregibus vastis, minuta, propullans inter fibros caulis. Stipite albo pulverulento, basi incrassato. Capitulo rufo-aurantio, convexo, in cupulam e stipitis apice dilatato, demum disco applanato et manifestim marginato.

Genus 28. Volutella. Fries. Veg. Sys. et Mycol. p. 173.

Fungus pulcherrimus, passim occurrens in foliis semivivis Quercinis Bethlehem, jam describendus diu nos exercuit ubi sit locandus. Nunc certior factus sum longa observatione eum huc pertinere. Nomine *Amphyphyto* multis a me communicatus est. V. Quercina, L. v. S.

*972. 1. V. Receptaculo corneo ceraceo-pezizaeformi, basi, stipitiformi, brevissima, folio adnato, quae basis autem in patellulam marginatam extensa. Cupula varie formata, undulata, extus plicato-rugulosa, ceterum glabra, colore purpureo-rubro, diametro in junioribus lineari—in adultis interdum ¼ unciali. Disco plerumque subumbonato. Totus fungus extus et quidem in disco, filis tenuissimis, cum pruina alba interspersis vestita, passim evanidis. Est quidem analogia cum Epichysio Todei. Crescit sparsim, sed plerumque multis speciminibus in eodem folio. Interdum fasciculatim. Substantia indurescit.

Genus 29. Ditiola.

*973. 1. D. *volvata*, F. p. 171, n. 3, ex Nova Anglia Torrey communicavit.
*974. 2. D. *sulcata*, F. n. 4, in rimis corticis Vitis, etiam ex Nova Anglia Torrey.

Tribus 4. Stictei.

Genus 30. Stictis.

1. *Stictis Corticiae.*

*975. 1. S. *ocellata*, F. 193, n. 3. Bethlehem rara.
*976. 2. S. *Pupula*, F. n. 4, in ramis salicinis Bethl.
*977. 3. S. *sphaeralis*, F. n. 5, rara in Fraxino Bethl.
*978. 4. S. *chrysophaea*, F. n. 6, in ramulis decorticatis Bethl.
*979. 5. S. *tenuis*, F. n. 9, Carolina a me Friesio missa.
*980. 6. S. *radiata*, F. n. 7, Bethlehem in Corni sericeae cort.
*981. 7. S. *pelvicula*, F. n. 10, in ram. Ribis florid. Bethl.
*982. 8. S. *pallida*, F. n. 11, in lignis vetustis sepium Sal. et Bethl.
*983. 9. S. *hemisphaerica*, F. n. 12, in ligno pineo Pennsylv.
*984. 10. S. Hydrangeae, L. v. S., valde vulgata in ramulis emortuis Hydrangeae, Bethlehem et Salem.

S. omnino affinis S. *radiatae*, a qua magnitudine multo majori et disco globoso elevato distinguitur.

*985. 11. S. Rubi, L. v. S., in antiquissimis caulibus Rubi villosi Bethl.

S. subimmersa, erumpens cum epidermide, verrucae ad instar, arcte cincta ab epidermide; verruca orbiculata. Limbo albopulveraceo, plicatim inflexo, faciliter detergibili. Disco excavato nigrescente.

*986. 12. S. fimbriata, L. v. S., ad latus interior squamarum Strobili Pini inopis juxta Kaign's Point, Philadelphia.

S. immersa, suberumpens, disco tremelloso ceraceo orbiculari, subconvexo, pruinoso, cinereo, limbo candidissimo prominente eleganter fimbriato-fisso. Aecidium exacte refert. Gregatim provenit. Siccitate subclausa.

*987. 13. S. caulincola, L. v. S., sub epidermide caulium majorum; primum tecta demum erumpens, Bethlehem.

S. minuta, atra, et circumcirca nigrificans, exacte orbiculata aut urceolata, solummodo ore rotundo. margine spurio cinerascente cincto, prorumpens.

*988. 14. S. Umbellatarum, L. v. S., vulgaris in caulibus Pastinacae Bethl. Affinis *radiatae*.

S. sparsa, gregibus tamen vastis caules occupans, immersa, ore pulverulento sublacero valde prominulo albo. Disco ime excavato pallido. Multo minor S. radiatae et margine vix manifestim radiato.

*989. 15. S. CERACEA, L. v. S., in caulibus passim, Bethl.
S. sparsa aut collecta in maculo exalbescente, immersa. Disco ceraceo albido saepe regulari. Limbo non pulverulento sed crassiusculo albo.
*990. 16. S. STELLA, L. v. S., in ramis ignotis ligno immersa, Bethl.
S. ime immersa, disco nigro urceolato, minuta, limbo albo stellatim fisso, valde prominente: laciniis 3—4 stellatim reflexis, pulvere obtectis.
*991. 17. S. LIGUSTRI, L. v. S., in ramulis Ligustri, Bethlehem, affinis S. Lecanorae.
S. sparsa erumpens, carnoso-tremellosa, patellaeformis, primum nigrescens, demum quasi lutescens in ligno. Margine elevato sublacero—et disco quasi pruinoso.
*992. 18. S. PHILADELPHI, L. v. S., in ramulis tenerrimis P. inodori, Bethlehem hortis.
S. erumpens, orbicularis, disco subceraceo tremelloso, omnino pulvere cinereo obtecto, magis in ambitu aggregato efficiens limbum crassiusculum.

2. *Xylographa.*

*993. 19. S. *parallela*, F. n. 14, in omni ligno vetusto, praesertim saepium nostr., "fence rails" dictorum, Bethl. et Salem.
*994. 20. S. *stictica*, F. n. 15, in canescente ligno Bethlehem.

3. *Propolis.*

*995. 21. S. *farinosa*, F. n. 16, vulgata in disco truncorum caesorum Bethlehem.
*996. 22. S. *hysterina*, F. n. 20, in Querco Salem et Bethl.
*997. 23. S. PROMINULA, L. v. S., in ipso libro ramentarum Vitis emortuae Bethl.
S. majuscula, valde prominens, primum immersa, demum fere libera aut superficialis, disco ime excavato albido-pallido, limbo valde dilatato, vix lacerato, sed saepe irregulari pluribus quasi in unum confluentibus.
*998. 24. S. *versicolor*, F. n. 17, in iisdem lignis cum Ascobolo nostro conglomerato, Bethlehem.
999. 25. S. HYSSOPI, L. v. S., in caulibus H. nepetoidis, Bethl.
S. ime immersa, minuta, urceolata, ore contracto, limbo albo-pulverulento, in radios patentes diviso. Hymenio lutescenti, demum quasi libero in cavitate. Distinguitur ore contracto.

Genus 31. SOLENIA.

1000. 1. S. *fasciculata*, F. p. 206, n. 1, Syn. Car. *incana*, n. 1266. Salem et Bethlehem.
*1001. 2. S. *candida*, F. n. 2, rarior Bethlehem.
*1002. 3. S. *villosa*, F. n. 3, freq. in lignis Bethlehem.
*1003. 4. S. *ochracea*, F. n. 4, Syn. Car. 1267 et 1268, urceolata—quae mera varietas. Frequens ambo varietates et. Bethl.

ORDO III. CLAVATI.

SUBORDO I. PILEOLATI.

Genus 32. HERICIUM.

Huc pertinet *Hydnum* (*Gomphum*) *Caput Medusae* jam recensitum—non infrequens Bethl. n. 532 supra.

Genus 33. SPARASSIS.

*1004. 1. S. *crispa*, F. I. p. 465, in horto Bartramii prope Philadelphiam sub maximis arboribus Cupressorum et Pinorum, exacte cum fungo lusatico convenientem inveni.

1005. 2. S. SPATHULATA, F. Sys. Veg. p. 89, Syn. Car. 1070, sub nomine M. spathulatae. Sine ullo dubio congenera prioris et Bethlehem quanquam rarissime obvia. Elench. F. p. 227, n. 2.

SUBORDO II. MITRULINI.

Genus 34. SPATHULEA. Sys. Veg. 88, Spathularia.

*1006. 1. S. *flavida*, F. 1. p. 491. In terra lignosa truncorum montis Pocono. Etiam ex New York. Variat clavula ime rufa.

Genus 35. MITRULA.

1007. 1. M. *paludosa*, F. 491. Leotia Ludwigii et Bulliardi, Syn. Car. 1117—1118, etiam freq. iisdem locis Bethlehem.

*1068. 2. M. INFLATA, L. v. S., Elench. F. p. 234, n. 3, valde memorabilis gregibus vastis occupat ramulos dejectos rarissime Salem.

1069. 3. M. EXIGUA, L. v. S., Syn. Car. 1119, et Elench. Fries. p. 235, rara Salem.

Genus 36. GEOGLOSSUM.

1008. 1. G. *glabrum*, F. 488, n. 2, Syn. Car. 1115, nondum Pennsylvania.

1009. 2. G. *hirsutum*, F. n. 1, Syn. Car. 1114, nondum in Pennsylv.

1010. 3. G. FARINACEUM, L. v. S., Syn. Car. 1116, nondum repertum in Pennsylv.

*1011. 4. G. RUFUM, L. v. S., ex Hope, New Jersey, communicavit Dr Kampman.
G. terrestre, glabrum, rufum, stipite tenuori, clavula multo crassior, et color clavulae rufior, apice obtuso inaequali. Subrugosum. Unciam longitudine excedens.

SUBORDO III. CLAVULATI.

Genus 37. CLAVARIA.

Trib. 1. BOTRYOIDEAE.

1012. 1. C. *Botrytis*, F. 466, n. 1, Syn. Car. 1075, et. Bethl. freq.

1013. 2. C. *formosa*, n. 2, Syn. Car. 1072, et. Bethlehem.

1014. 3. C. *flava*, F. n. 3, Syn. Car. 1073, frequens, et. Pennsylv.

1015. 4. C. *grisea*, F. n. 6, Syn. Car. 1074, nondum Pennsylv.

*1016. 5. C. *spinulosa*, F. n. 7, quibusdam annis freq. Bethl.

Trib. 2. RAMARIAE.

1017. 6. C. *stricta*, F. n. 8, Syn. Car. 1076, rarior Salem.

1018. 7. C. *palmata*, F. n. 9, Syn. Car. 1077, etiam Bethl.

1019. 8. C. *abietina*, F. n. 11, Syn. Car. 1078, rarior et. Pennsylv.

1020. 9. C. *pyxidata*, F. n. 13, Syn. Car. 1079, vulgaris Bethl.

*1021. 10. C. *apiculata*, F. 12, Menango Chunk, Jersey, inventa.

1022. 11. C. *pratensis*, F. 15, Syn. Car. 1081, nondum Pennsylv.

1023. 12. C. *corniculata*, F. 16, Syn. Car. 1080, non in Pennsylv.

*1024. 13. C. *crispula*, F. 14, inter muscos rarior Bethl., olim nobis C. *epiphylla*, Bethl.

*1025. 14. C. *crocea*, F. 18, rarissime Bethl.

*1026. 15. C. *tenacella*, F. 20, Salem solummodo inventa.

*1027. 16. C. *virgata*, F. 21, ex New York missa Torrey.
1028. 17. C. *cristata*, F. 22, Syn. Car. 1082 et 1083, et. Bethl.
1029. 18. C. *rugosa*, F. 23, Syn. Car. 1088, etiam Pennsylv.
1030. 19. C. *macropus*, F. 26, Syn. Car. 1086, nondum Bethl.
*1031. 20. C. *Kunzei*, F. 25, rara Bethl. obvia.
1032. 21. C. *gracilis*, F. 27, Syn. Car. 1085, et. Pennsylv.
1033. 22. C. *subtilis*, F. 28, Syn. Car. 1084, et. Bethl.
1034. 23. C. *byssiseda*, F. 29, Syn. Car. 1087, et. Bethl.
1035. 24. C. TETRAGONA, L. v. S., Syn. Car. 1090, et. Bethl.
1036. 25. C. *mucida*, F. 30, Syn. Car. 1091, passim Pennsylv.
*1037. 26. C. *fuliginea*, Pers. rarior Salem.
*1038. 27. C. TENUIS, L. v. S., in muscis nobis ex New York missis.
C. sparsim ex ligno proveniens, fere simplex, affinis C. mucidae, et tantum rarius apice furcato. Ceterum tenuis, $\frac{1}{4}$ unciali longitudine, pallida aut alba, gracilis.
*1039. 28. C. COMPRESSA, L. v. S., distinctissima species, Dr Kampman ex New Jersey communicavit.
C. majuscula, 2—3 uncias longa, ex ipsa basi crassiuscula vage ramosa, ramis crassis non valde divisis, complanato compressis, quasi canaliculatis, apice obtusatis, deorsim attenuatis. Flavo-alutacea.
*1040. 29. C. SUBCORTICALIS, L. v. S., rarissime sub cortice reperta monte Menango chunk, Jersey.
C. uncialis, caule brevi tenuori, ramoso-dilatata, ramis subdivaricatim furcatis, compressulis ; alutaceo-alba, valde pulverulenta, et subvillosa. Apicibus ramorum acutis. Cornu cervinum aemulat.
*1041. 30. C. CORONATA, L. v. S., in ligno putrido dejecto Bethlehem.
C. lignatilis, jam e basi divisa, ramosissima ; ramis primordialibus divergentibus demum complanatim aut angulatim compressis, apicibus adhuc divergentioribus truncato-obtusis, in ipsa truncatura coronatis processubus minutis circumcirca Cladoniae more. Substantia subtenaci. Ramis omnibus madido statu quasi subdiaphanis et subviscosis, substriatis ; exsiccata autem non cornea fit. Mediocri magnitudine. Colore pallido-cervino.
*1042. 31. C. SULPHURASCENS, L. v. S., aestate inter folia putrescentia, Bethl.
C. delicatula, semiunciali altitudine. Caule aut stipite tereti, basi incrassata, albo-pruinosa ; apice ramosa, ramis subfastigiatis teretibus, ramulis breviusculis corniculatis acutis. Radiculis byssoideis foliis insidens. Color totius fungi, e sulphureo-subfuligineus.
*1043. 32. C. TENAX, L. v. S., ad terram nudam in Insula Lehigh prope Bethl.
C. fasciculata, substantia tenacissima, demum subcornea, e basi jam ramoso-divisa, ramis compressis, apice fere in membranam dilatatis, ramulis minutis irregulariter prominentibus et inde fimbriatis. Colore alutaceo-rufo. Uncialem altitudinem non excedit.
*1044. 33. C. MERISMATOIDES, L. v. S., cum priori ad terram nudam.
C. caulescens, caule varietorto, brevi, et fere a basi diviso in ramos numerosos strictos, tereti-angulatos tenues, fastigiatos. Apice ramis dilatato subfimbriatis. Substantia tenacissima. Colore uniformi pallido lutescente. Uncialis aut biuncialis.

Trib. 3. CORYNOIDEAE.

1045. 34. C. GIGANTEA, L. v. S., Syn. Car. 1112, Elench. Fries. pag. 231. Etiam frequens Pennsylvania. Abnormis—an novum Genus? Structura interna fibrosa, stipites Agaricorum in animam revocans. Interdum plagas occupat densas 3—4 pedes diametro in vicinitate truncorum inter radices subdenudatas.
1046. 35. C. *pistillaris*, F. n. 31, Syn. Car. 1095, rara Pocono.
1047. 36. C. *ligula*, F. n. 32, Syn. Car. 1094, non in Pennsylv.
1048. 37. C. VERNALIS, L. v. S., Syn. Car. 1098, Vere et. Bethlehem.
1049. 38. C. TRICHOMORPHA, L. v. S., Syn Car. 1099, et. Pennsylv.
*1050. 39. C. *contorta*, F. 33, Torrey ex Massachusetts com.
1051. 40. C. *fusiformis*, F. 41, Syn. Car. 1101, et. Bethlehem.
1052. 41. C. *inaequalis*, F. 43, Syn. Car. 1102, Torrey etiam misit.
1053. 42. C. *angustata*, F. 44, Syn. Car. 1104, etiam ex Torrey.
*1054. 43. C. *aurantiaca*, F. 46, ex Doctissimo Torrey com.
*1055. 44. C. *argillacea*, F. 48, Salem nobis obvia.
1056. 45. C. *flavipes*, F. 49, Syn. Car. 1103, et. Pennsylv.

1057. 46. C. *fumosa*, F. 51, Syn. Car. 1105, nondum Pennsylv.
*1058. 47. *C. nigrita*, F. 52, rara Bethlehem.
1059. 48. C. *fragilis*, F. 55, Syn. Car. *eburnea* 1106.
1060. 49. C. *falcata*, F. 57, Syn. Car. 1107, et. Pennsylv.
*1061. 50. C. *vermicularis*, F. 54, Salem rara ad terram.
*1062. 51. C. AURANTIO-CINNABARINA, L. v. S., locis terrae nudae ad ripas Lehigh in Rhododendretis.
C. terrestris ad radices tamen arborum, simplex, carnosa, subtenax, fasciculatim proveniens, seriebus saepe elongatis, multiformis, varians a junioribus 3 linearibus ad triunciales adultas altitudine. Deorsum attenuata, medio incrassata, apicem versus iterum attenuata. Clavulis aetate compressis, flexuosis, juventute teretibus. Basi albo-pulverulenta aut pruinata et subbyssacea. Ceterum gaudet colore ex aurantio in cinnabarinum vergenti. Majoribus clavulis interdum ½ uncialibus crassitie; apice semper obtusiusculo.

Genus 38. TYPHULA.

1063. 1. T. *gyrans*, F. p. 494, Syn. Car. 1113, rara, etiam Bethlehem ad stipites.
*1064. 2. T. MUCERDAE, L. v. S., rarissima in mucerda Shamokin Pennsylv.
T. gregaria, minuta, lineam non superans, albo-pallida, stipite gracili, glabro, clavula exacte ovata concolore. Tuberculo nullo.
*1065. 3. T. RAMEALIS, L. v. S., rarissime in ramis Castaneis, Bethl.
T. minuta, sparsa 1—2 linearis. Stipite brevi, glabro, badio-lutescente. Clavula subcylindrica, subfalcata interdum, attenuata, albido-citrina, subpulverulenta.
*1066. 4. T. *villosa*, F. 495, n. 5, rarissime obvia, Bethlehem ad folia et stipites deject.

Genus 39. PTERULA. Fries. Syst. Veget. p. 90.

1067. 1. P. PLUMOSA, L. v. S., Syn. Car. 1089, etiam Bethlehem inter folia.

SUBORDO IV. PISTILLARINI.

Genus 40. CALOCERA.

1068 et 1069, vide sub Mitrula—omissa.
1070. 1. C. *viscosa*, F. p. 486 et 487, n. 1, Salem rara.
*1071. 2. C. *furcata*, F. 4, Salem et Bethl. in truncis.
1072. 3. C. *cornea*, F. n. 5, Syn. Car. 1092, et. Bethlehem.
1073. 4. C. *glossoides*, F. n. 6, Syn. Car. 1093, et. Bethl. freq.
*1074. 5. C. PILIPES, L. v. S., ex ligno dejecto gregatim propullans, Salem.
C. simplex, 2—3 lin. alta, clavula cinereo-nigra cornea basi nigricanti subpilosa, ceterum compresso-glossoidea. Vegetans colore pallide fuliginco. Apice attenuato.
*1075. 6. C. FASCICULATA, L. v. S., abnormis, minuta, in Hymenio Daedaleae, Bethl.
C. minutissima, fasiculatim prorumpens, sed clavulis simplicibus vermicularibus, aureofulvis, flexuosis, tenacibus stipitem versus nigricantibus. Semilinearis. Substantia ceterorum.

Genus 41. CRINULA.

*1076. 1. C. *caliciiformis*, F. p. 403, rara obvia in cortice Robiniae Bethlehem dejecto.

Genus 42. Pistillaria.

1077. 1. P. *micans*, F. 497, n. 1, Syn. Car. 1108, non Penns.
1078. 2. P. *ovata*, n. 2, F., Salem et Bethl.
*1079. 3. P. *quisquiliaris*, F. 3, ad stipites Bethlehem.
*1080. 4. P. *muscicola*, F. 4, in muscis hypnoideis, Salem rarissime.

Ordo IV. TREMELLINI.

Subordo I. PILEOLARES.

Genus 43. Helotium.

*1081. 1. H. *umbonatum*, F. var. *epiphylla*, in foliis putridis Salem ; faciliter periit.

Genus 44. Cyphella.

*1082. 1. C. *lacera*, F. 202, n. 2, Vol. II. rarius Salem in laqueo vetusto.
*1083. 2. C. *muscicola*, F. n. 3, immuscis ad terram Philad.
1084. 3. C. pendula, L. v. S., Carol. Syn. Carol. 1183, Peziza valde similis primo obtutu Sphaeriae pendulae.

Genus 45. Guepinia. Syst. Veget. F. p. 92.

*1085. 1. G. helvelloidea, L. v. S. Fungus rarissimus, omnino sui generis, huc pertinere videtur. Mense Augusto obvius ad terram locis graminosis.
G. anomala, subtremelloso-carnosa, intus gelatinosa et udo tempore quasi deliquescens, siccitate autem indurescens et cornea deveniens. Stipite cavo, sursum in pseudo-pileum irregulariter inflato-bullatum, rugoso venosum dilatato. Apicibus pluribus ramosis et corniculatis (semper cavis) obtusis. Hymenio externo manifestim sporidifero, totum fungum occupante. Altitudine statu vegeto 4—5 unciarum. Siccitate diminuitur. Colore aquoso-pallido.

Subordo II. CUPULARES.

Genus 46. Lemalis. Syst. Veg. F. p. 93.

*1086. 1. L. *Betuli*, F. II. p. 193, Peziza Betuli, Salem et Bethl.
1087. 2. L. olivaceo-virens, L. v. S., Syn. Car. Peziza 1234, solummodo Salem obvia, in truncis Bethl.
*1088. 3. L. *pulla*, F. II. p. 160, n. 5, Bethlehem in asseribus.
1089. 4. L. rufo-olivacea, L. v. S., Syn. Car. 1220, Peziza nigro-olivacea ; Salem et Bethlehem differt specifice a priori.
*1090. 5. L. quercina, L. v. S., in ramis querneis deorbatis, Bethl.
L. minor, sparsa, sublibera, fusco-atra, subgelatinosa, ovata. Disco interdum subplicato, margine subinvoluto nigro, pulverulento nigro. Diametro 1—2 lineari.

Genus 47. Exidia.

† *Auriculae.*

1091. 1. E. *Auricula Judae*, F. 221, n. 1, Syn. Car. 1136, et freq. Pennsylvania.
1092. 2. E. AURIFORMIS, L. v. S., Syn. Car. 1156, F. n. 4.
1093. 3. E. *recisa*, F. n. 5, Syn. Car. 1154, praesertim in Salicinis ramis, et. Bethl.
*1094. 4. E. *truncata*, F. 6, in Pyro Malo Bethlehem.

†† *Glandulosae.*

1095. 5. E. *glandulosa*, F. 7, Syn. Car. 1135, vulgat. et. Pennsylv.
*1096. 6. E. *saccharina*, F. 8, Bethl. in cortice Catalpae.
*1097. 7. E. *repanda*, F. 9, in ramis Platani, Bethl.
*1098. 8. E. *empressa*, F. 10, in ramo salicino, Bethl.
1099. 9. E. CRENATA, L. v. S., F. 11, Syn. Car. 1141, etiam occurrit in ramis Bethlehem.
*1100. 10. E. LURIDA, L. v. S., passim occurrit in Ramis Celastri, Bethlehem.
E. effusa, gyroso-plicata, lurida, orbiculata, crassiuscula. Sicca diminuta. Papillis raris adspersa.
*1101. 11. E. SPICULATA, L. v. S., rarius in disco caeso truncorum Platani, Bethl.
E. adpressa, effusa, crassiluba, verrucosa, rugulosa, olivaceo-virens, siccitate parum diminuta, sed colore tum nigro. Papillis frequentibus in superficie, margine in lobos minores obtusos diviso
*1102. 12. E. APPLANATA, L. v. S., in interiori cortice Rhois glabri, Bethl.
E. applanato-expansa, arcte adpressa, margine tantum sublibero, figura oblonga, satis crassula, 2—3 lin. longa; sicca atra, et quasi pulveraceo-furfuracea, rugis aut venis extus paucis notata. Papillis sparsis.

Subordo III. TREMELLEI.

Genus 48. Tremella.

† *Mesenteriformes.*

*1103. 1. T. *fimbriata*, F. p. 212, n 2, passim Salem et Bethl.
1104. 2. T. *foliasa*, F. n. 4, Syn. Car. 1138, et. Bethl. freq.
*1105. 3. T. *frondosa*, F. n. 3, truncis quercinis Bethl.
1106. 4. T. *lutescens*, F. n. 5, Syn. Car. 1130, vulgaris et. Pennsylv.
1107. 5. T. AURANTIA, L. v. S., Syn. Car. 1131, F. 6, etiam frequenter et maximis speciminibus Bethl. occurrit.
1108. 6. T. *mesenterica*, F. 7, Syn. Car. 1129, et. Bethlehem.

†† *Cerebrinae.*

*1109. 7. T. *albida*, F. 9, rarior ad varios truncos Bethl.
*1110. 8. T. *intumescens*, F. 10, rara ad truncos Bethl.
1111. 9. T. VIRENS, L. v. S., Syn. Car. 1134, F. 11, in Corni florid. ramis—nondum Pennsylv.
*1112. 10. T. CRASSILOBA, L. v. S., propullans ex ramis dejectis Bethlehem.
T. prorumpens, constans ex lobis crassis carnoso-tremellosis subrotundatis et gluboso-aggregatis albidis. Statu madido superficie quasi squamulosa; exsiccata nigra et pulverulenta.
*1113. 11. T. CORRUGATA, L. v. S., rarius in lignis et ramis Bethl.
T. caespitosa, corrugata, lobis flaccidis tenuioribus, margine intumescentibus, venosis; nigropurpurascente colore. Sicca subsquamulosa. Unciali diametro.

††† *Coryne.*

1114. 12. T. *sarcoides*, F. n. 2, p. 217, Syn. Car. 1156, Pez. et Bethl.
*1115. 13. T. *clavata*, F. n. 3, p. 218, rarior Bethl.
*1116. 14. T. *unicolor*, F. n. 4, rarissime Bethl.

*1117. 15. T. PALMATA, L. v. S., forma et indole affinis *Canth. spathulariae*, n. 292, in ligno putrido Bethl.

T. radicata, lignum penetrans radice tomentosa. Stipite compresso ; palmatim expansa, subcornea sicca, elegantissime aurantia, subdiaphana, apice capituloso, gyroso plicato, compresso et dilatato: Capitulo cum stipite confluente.

Genus 49. NAEMATELIA.

1118. 1. N. *encephala*, F. p. 227, n. 1, Syn. Car. 1132, et. Pennsylv.

*1119. 2. N. *rubiformis*, F. n. 2, Specimina nostra majores demum nigrescunt. Bethlehem in ramis.

1120. 3. N. NUCLEATA, L. v. S., Syn. Car. 1142, F. n. 3, vulgata est etiam in Pennsylvania. Saepe inventa membrana, siccitate inconspicua, triuncialiter expansa.

Genus 50. DACRYMYCES.

1121. 1. D. *fragiformis*, F. p. 229, n. 1, rarior Syn. Car. 1147, etiam Bethl.

1122. 2. D. *violaceus*, F. n. 3, Syn. Car. 1148, et. Bethlehem in ramis decorticatis Mali. Siccus niger.

*1123. 3. D. *virescens*, F. n. 4, in asseribus, Bethl.

1124. 4. D. *stillatus*, F. n. 5, Syn. Car. 1149, abietina frequens ad ligna et Bethlehem.

1125. 5. D. *lacrymalis*, Pers. et Syn. Car. 1150, videtur mihi omnino a priori colore ac indole distinctus. Freq. et. Bethlehem.

*1126. 6. D. *Syringae*, F. n. 6, rarior in ram. Syringae Bethl.

*1127. 7. D. CINNABARINUS, L. v. S., freq. in ramis salicinis Bethlehem, affinis priori.

D. minor, prorumpens, epidermide arcte ciuctus, primum convexus, demum concavus et subpezizaeformis, colore vivide cinnabarino, saepe confluens ac gregibus vastis ramos occupans longitudinaliter effusus. Faciliter excutitur, linquens faveolum. Floccis internis, aqua solutus egregie distinguitur.

*1128. 8. D. INVOLUTUS, L. v. S., sat. affinis D. lacrymali, ligno antiquo Salem et Bethl.

D. magnitudine D. stillati, subrotundo-dilatatus, gyroso-plicatus, aurantio-pallidus. Basi involutus tomento strigoso albo quod saepe totum fungum induit.

*1129. 9. D. PELLUCIDUS, L. v. S., Maximus, rarior ad ligna Salem ; etiam Philadelphiae vicinitate obvius.

D. maximus, tres uncias longitudine ac latitudine occupans, candidus, subpellucidus, statu vegeto, initium Hydni gelatinosi referens—forma autem Tremellae est gyrosa, varie lobata, lobis crassis obtusis. Structura interna omnino est Dacrymyces. Sicco statu membranam sistit crassam duram, plicato-venosam, pellucidam.

*1130. 10. D. CAPITATUS, L. v. S., in caule Brassicarum Bethlehem obvius.

D. stipitatus, stipite caulem penetrans, basi tomentoso, crasso, furfuraceo (Ditiolam referens) abiente in capitulum subrotundo-globosum, saepe impressum, interdum plicatum, colore aurantio-rubro. Sparsim crescit—interno contextu omnino hujus generis.

*1131. 11. D. DIFFORMIS, L. v. S., rariter in ramulis Rosae corymbosae Bethlehem.

D. difformis, varie tortus, fere Myxotrichi ad instar crumpens ex epidermide, aurantio-ruber, subexpansus. Structura interna ut in ceteris.

*1132. 12. D. EPIPHYLLUS, L. v. S., Salem obvius in foliis Galii. Omnino Sclerotium refert sed sub lente structura interna Dacrymycem ostendit.

D. gregarius, subrotundus, oblongusve lutescens, minutus, ½ linearis subpulvinatus, quasi innatus, saepe subconfluens. An etiam Sclerotium herbarum huc pertinet?

*1133. 13. D. VITICOLA, L. v. S., rarior ex epidermide Vitis emortui propullans Bethl.

D. biformis. Ex cortice aut epidermide prorumpens, stipite crasso praeditus, basi tomento involuta aut volvata, in capitulum gyrosum aurantio-rubrum dilatato. In ligno decorticato autem, effusus, gyroso-plicatus, tenuis, ejusdem coloris. Utraque forma servat structuram internam Dacrymycis.

*1134. 14. D. AZALEAE, L. v. S., rarior in ramis emortuis Azaleae nudiflorae Bethl.

D. sparsus, minutus, ex cortice ut Myxosporium, propullans luteo-aurantius, pellucidus, explanatus in capitulum subpalmatim lobatum, breve. Structura interna priorum.

Genus 51. Pyrenium.

1135. 1. P. *terrestre*, Syn. Car. 530, solummodo Carolina.
*1136. 2. P. Collae, L v. S., in Colla indurata mucosa Bethlchem obvium.
P. magnitudine seminis papaveris, nidulans in colla et aggregatim prorumpens, ovato-globosum incarnato-aurantium, tomento albo subinvolutum. Contextus indistincte floccosus.

Subordo IV. HYMENULI.

Genus 52. Phyllopta.

*1137. 1. P. *biparasitica*, F. p. 219, n. 1, in Hymenio Thelophorae aut Polypori Bethl.
1138. 2. P. parasitica, L. v. S., Syn. Car. 1143, Tremella Carolina et Pennsylv. in *Clavaria gigantea*.

Genus 53. Agyrium.

*1139. 1. A. *caesium*, F. p. 231, n. 1, rarum Bethl. in lign.
*1140. 2. A. *rufum*, F. n. 3, freq. in Castaneo ligno Bethl.
*1141. 3. A. *atrovirens*, F. n. 4, ad ramos dejectos Bethl.
*1142. 4. A. *nigricans*, F. n. 5, in dejecto cortice Castan. Bethl.
*1143. 5. A. *lacteum*, F. sub nigricante citat nec autem descripsit—effusum lacteum demum nigrescens. In stipitibus variis Bethl. obvium.
*1144. 6. A. *herbarum*, F. n. 6, frequens ad stipites, Bethl.

Genus 54. Hymenella.

*1144. 1. H. *vulgaris*, F. p. 234, n. 2, in caul. Solidaginum, Bethl.
*1145. 2. H. *nigra*, F. n. 3, in stipitibus Rubi Bethl.
*1146. 3. H. ciliata, L. v. S., in caulibus v. c. Arctii Bethl.
H. subrotundo-difformis, tuberculosa, pallida aut rufescens, circum basin ciliata, ciliis albis persistentibus. Minuta.

Classis Secunda. PYRENOMYCETES.

Ordo I. SPHAERIACEI.

Subordo I. SPHAERINI.

Nos in sequente Synopsi hujus Subordinis amplissimi, melius visum Quatuor Genera Friesii in Systemate ejus Orbis Vegetabilis, sub unum Genus *Sphaeria* retinere, cum ex ipso Friesii sententia non praeferenda sunt dispositioni vastissimi generis in Systemate mycologico exhibitae. Hanc quidem dispositionem non omnino perfectam agnovimus, nec tam naturalem ut possit immutata manere, sed satis utilis nobis videtur fungillos hos rite cognoscendos. Non autem in animo est Systema construere, sed species recensere. Ceterum nobis contigit numerum specierum quam maxime augere, utpote regionibus americanis tam feracibus ligni emortui, matricis Sphaeriarum, apprime proprium erat.

Genus 55. Sphaeria.

Trib. 1. Cordyceps.

a.) Hypocrea.

1147. 1. S. *militaris*, F. 1, Syn. Car. 1, in Pennsylv. Pocono.

1148. 2. S. *alutacea*, F. 2, Syn. Car. 2, rara et. Bethlehem.

*1149. 3. S. *capitata*, F. 6. Salem Carolina rara in terra orta ex putrido trunco Castaneae—omnino autem sine Sclerodermate defosso.

1150. 4. S. *entomorhiza*, F. Syn. Car. 3, rarissima.

1151. 5. S. *ophioglossoides*, F. 4, Syn. Car. 5, loco nunc aqueducto occupat ante 18 annos Bethlehem inveni nec iterum.

1152. 6. S. mucronata, L. v. S., Syn. Car. 4, F. 7. Icon in Journal of Acad. Philad. Vol. V. Tab. 1, f. 1, rarissime obvia solummodo Carolina.

*1153. 7. S. herculea, L. v. S, in terra lignosa rarissime obvia Salem.

S. subcarnosa, subsuberosa. Capitulo magno ovato clavato in stipitem attenuato-elongatum decurrens. Colore alutaceo, intus cum stipite flavescente. Peritheciis superficialibus minoribus concoloribus in capitulo obtuso. Altitudo totius fungi 1½ uncialis. Capitulum ½ unciam diametro.

*1154. 8. S. Geoglossum, L. v. S., Icon in Journal of Acad. Philad. Vol. V. Tab. 1, f. 4. Dr Torrey ex New York communicavit. An terrestris ?

S. carnosa-suberosa, simplex, nigerrima. Clavula linguaeformi, compressa, subcanaliculata, falcata, apice obtuso. Peritheciis oblongis, nigris, subprominulis. Ostiolis minutis vix prominentibus. Intus albida. Stipite triplo longiori clavula subsquamuloso, basi hirsutulo, gracili, suberoso, intus albo, extus nigro. Altitudine pollicari. Refert Geoglossum.

*1155. 9. S. clavulata, L. v. S., species omnino admirabilis, passim in vivis ramulis Quercus palustris et coccineae, onustis operibus recentioribus Cynipum. Bethlehem ad ripas Lehigh.

S. Subiculo clypeato, ovato, regulari, contexta fibrilloso-membranaceo arcte epidermide insidens, centro incrassato-elevato, marginibus subliberis inflexis, ad quartam partem unciae expanso. Ex hoc subiculo patellari, basilari, assurgunt clavulae rigidulae, subdivergentes, ad 6—10 numerum ; tres lineas altae, substantia suberosa, intus albae, extusnigrae, et apice obtuso cinereo-pulveraceae. Stipite attenuato, et in capitulum oblongum obtusum sensim abiente praeditae sunt. Aetate vigentiori Capitulum distinctius a stipite sese ostendit, onustum seriebus parallelis peritheciorum nigrorum. His prominulis cum ostiolis minutis, et demum dejicientibus corticem externam cinereo-pulverulen-

tam ; intus albo-farctis. Capitulum et clavula intus albescunt more S. capitulae. Stipite versus basin incrassato.

b.) Hypoxyla.

1156. 10. S. *bulbosa*, F. 10, Syn. Car. 6, Carol. et Bethl.

1157. 11. S. *hypoxylon*, F. 11, Syn. Car. 7, ubique terrarum.

1158. 12. S. PERSICARIA, L. v. S., Syn. Car. 9, F. 13, Salem solum.

1159. 13. S. *digitata*, F. 8, Syn. Car. 10, frequens Pennsylv. Speciminibus optimis maximis.

1160. 14. S. *polymorpha*, F. 9, Syn. Car. 11, freq. et. Bethlehem.

1161. 15. S. *carpophila*, F. 12, Syn. Car. 8, Carolina solummodo mihi obvia in nucibus Liquidambaris. Pennsylvania, etiam fagineis, ut in Europa.

*1162. 16. S. SUBTERRANEA, L. v. S. Icon in Journal of Acad. Tab. I. fig. 3, sed representans fungum imperfectum. Species nunc melius cognita primum ab amicissimo Torrey accepta ex fodinis New Jersey, nuperrime in puteo, praesertim autem Bethl. in doliis semidefossis et tectis, aquae collingendae causa obvia.

S. suberosa, subsimplex speciminibus fertilibus, sterilibus autem saepe intricato ramosis imo anastomosantibus ; ceterum longissima (interdum semipedalis) gracilis, flexuosa, et compressa ; clavula vix a stipite distincta ; apice plerumque indiviso, attenuato, torto, compresso, griseo-pulverulento ; basi paululum incrassata, hirsutiuscula, cum cetero fungo extus nigro-badia. Peritheciis demum in raris fertilibus, maximis, pro ratione trunci tenuioris, quem undique occupant, valde prominulis, acutiusculis ostiolis, unde quasi aculeatus truncus fertilis. Satis distant inter se.

*1163. 17. S. CORNU DAMAE, L. v. S., passim in truncis antiquis dejectis subdefossis e latere provenit Bethl.; affinis S. hypoxylo sed multo crassior.

S. suberosa, aterrima, crassiuscula, trunco subradicato, varie torto, atro-floccoso in radice, compresso, in apicem furcato-ramosim dilatatur, plerumque apicibus abrupte acuminatis, demum fertilibus, exacte cornu damae. Junior apice ut ceterae Hypoxylae Sphaeriae hujus sectionis squamuloso-cinerascente, ceterum tomento atro undique brevissimo investita. Peritheciis majusculis prominulis, ostiolis obtusato-cylindricis brevibus. Intus candidissimus. Totus fungus saepe triuncialis.

*1164. 18. S. FLABELLIFORMIS, L. v. S., Journal of Academy, Vol. V. Tab. I. f. 5. Syn. Car. p. 85, n. 1071, nomine *Merisma nigripes* perperam. Rarior occurrit Sphaeria, rarissime fertilis, ad ligna sicca molliora, nigro-tincta, jam primo obtutu colore distincta amoene incarnato. Etiam Bethlehem obvia.

S. suberosa, brevicaulis, bulbosa, bulbo crasso applanato nigro convexo insidens, trunco breviusculo crasso, e bulbosa basi mox in ramos palmatos, fimbriatos, congestos in capitulum, diviso, colore amoene luteo-incarnato, instrato pulvere copioso concolore. Trunco deorsum nigrescente, piloso, cum bulbo ; seorsum tereti pallente. Peritheciis demum in palmatis apicibus provenientibus, vix prominulis. Semiuncialem altitudinem vix excedit. Semper sparsim nec aggregatim crescit.

Trib. 2. PORONIA.

1165. 19. S. CANDIDA, L. v. S., Syn. Car. 20, F. 16, rara in ramis fraxineis, Salem et Bethlehem. Sine ullo dubio est Sphaeria, cupula sua ligno ipso tam adnata ut remanet remoto cortice. Cum sequente transitum fecit ad sectionem aut tribum proximum.

*1166. 20. S. INTERMEDIA, L. v. S., Jour. of Acad. pag. 8. Affinis priori, sed distinctissima. Bethl. rarior in ramis corruptissimis Pruni hyemalis—ex epidermide gregatim erumpens.

S. pulvinato-cupulata, i. e. Sphaeria pulvinata insidens Cupulae subrepandae inseparabilis ; fere primo obtutu sessilis, sed revera abienti in stipitem brevissimum, crassum, penetrantem interiorem corticem. Cupula cum stromate connata, extus nigra plicata. Peritheciis crebris peripheriicis, ovato-globosis, in superficie elevatis, furfure albo-brunnescenti tectis, Stromate cinereo-brunneo, pulveraceo—cortice fungi externo fusco, furfure albescenti subtecto. Tota sphaeria magnitudine S. fuscae subrotunda, applanata, interdum repanda.

*1167. 21. S. POCULA, L. v. S. Icon. Journal of Acad. Tab. II. f. 6. Primum accepi a Dr Torrey ex New York propullans ex cortice Fraxineo. Nunc copiose Bethl. inventa in variis Corticibus praesertim Castaneorum—semper cupulis inversis pendentibus. Omnino refert Cyphellam pendulam nostram, ita ut eandem putassem, nisi praesentia peritheciorum obstaret. In ramis Rubi emortuis varietatem minus fasciculatam inveni. Haec certissime S. punctatae, quam nondum in America inventam maxime dolendum—genuina socia.

S. suberosa-coriacea, stipitata ; stipitibus fasciculatim ex epidermide prorumpentibus, incurvis, sensim dilatatis in cupulas obverse pendulas, extus ex albido-fuliginosis, demum subfurfuraceis ; stipites semper crassi sunt. Cupulis excavatis, disco planiusculo, margine crasso, obtusato, inflexo-pulverulento. Peritheciis immersis disco, minutis, monostichis lutescentibus, ostiolis nigris, vix prominentibus. Substantia cupularis intus ex albo-fuliginea aut badia, suberosa. Altitudo caespitis et singularium cupularum 4—5 lineas, diameter disci 2—5 linearis. Aetate provectiori, stipites fusco nigrescunt.

Trib. 3. PULVINATAE.

α Hypoxylae.

1168. 22. S. *concentrica*, F. 18, Syn. Car. 12, et. Pennsylv. ubi saepe maxima.

1169. 23. S. *fragiformis*, F. 19, Syn. Car. 14, frequens et. Bethl.

1170. 24. S. *fusca*, F. 20, Syn. Car. 19, ad ramos freq. Bethl.

*1171. 25. S *argillacea*, F. 21, non est eadem cum nostra multiformi. Bethlehem passim.

1172. 26. S. *cohaerens*, F. 22, Syn. Car. 18, et. Pennsylv.

1173. 27. S. *multiformis*, F. 23, Syn. Car. 13, et. Pennsylv. sed rarior. *β granulosa*, Syn. Car. 16, mera varietas.

1174. 28. S. DURISSIMA, L. v. S., Syn. Car. 46, F. 24, rarior Bethlehem. Ex tropicis optima specimina.

*1175. 29. S. VERNICOSA, L. v. S., Journal of Acad. Tab. I. f. 2. Species haec pulcherrima rarissime mihi obvia ad palos saepium, Salem Carolinae.

S. maxima, plusquam unciali altitudine, subturbinato-stipitata. Cortice externo splendide vernicoso atra, in apice turbinato capitulato, subrugoso undulata, ostiolis vix perceptibilibus. Peritheciis periphaericis, minutis, subglobosis, nigro-corticatis, nidulantibus in primo strato stromatis sub externo cortice. Stroma constans ex stratis concentricis peritheciorum majorum, oblongo vatorum densissime stipatorum, implentibus capitulum totum turbinatum, aeque ac stipitem. Hae Perithecia meri sunt sacculi membranacei candidi, omnis corticis nigrae expertia ; statu vegeto repleti pulvere seminali copioso aterrimo, tum copia ingenti per ostiola, ne lentis ope distinguenda, ejecto, superficiem Sphaeriae et lignum circacircum tingente, Sacculi persistentes post pulveris ejectionem ; tum intus candidissima sphaeria est. Capitulum turbinatum diametro semiunciali, abruptim in stipitem ¼ unciae crassum abiens. Stipite semiunciam alto. Proxima S. concentricae—sed optime distincta.

*1176. 30. S. MARGINATA, L. v. S., Jour of Acad. Tab. II. f. 8: affinis S. multiformis, sed major. In Pennsylvania haec species vulgatissima praesertim ad ramos quercinos locum usurpat S. multiformis quae rarior.

S. pulvinata, confluens, valde elevata, major. Juniore aetate ochroleuca (pro more pulverulenta) maturo, nigerrima absque ullo nitore. Superficie ex peritheciis periphaericis subjacentibus, adeo regulariter granulata. Peritheciis ipsis cum externo cortice satis prominentibus, subhemisphaerice, at horizontaliter truncatis, margine in truncatura annuliformi cinctis subelevato. Centro truncaturae conico-applanato abiente in ostiolum, glaberrimo—cortice reliquo externo rugosa. Peritheciis ceterum corticatis, monostichis, subglobosis, nidulantibus interne in stromate nigro, sacculo albo instructis. Pulvinuli saepe ¼ unciales ad longitudinem et latitudinem sex uncialem subconfluunt. Pulvere atro copioso. Structura externa peritheciorum differt a S. multiformi.

*1177. 31. S. ENTEROMELA, L. v. S., Jour. of Acad. p. 10, e rimis corticalibus Castaneorum erumpens, rarior, Bethl.

S. pulvinata, longitudinaliter confluens, rubro-rubiginosa, superficie non granulata. Cortice interiori, aterrimo. Pulvinulis subdifformibus compressiusculis. Stromate aterrimo, in quo immersa sunt sparsim perithecia majora, ceteris peritheciis periphaericis, minutis, globosis, nigris. Superne quasi rubiginoso-pulverulento cortice exteriori furfurascente tecta. Interruptim confluunt saepe pulvinuli longitudinaliter ad longitudinem semipedalem. Singuli pulvinuli ¼ unciales.
Quoad indolem externi corticis affinis S. fragiformi.

*1178. 32. S. TERES, L. v. S., Journ. of Acad. Tab. ab amicissimo Z. Collins communicata in cortice ignoto.

S. pulvinata, subtercti-cylindrica, apice obtuso, rotundata. Cortice exteriori tuberculoso-undulato rubiginosa. Stromate fuliginoso in quo undique peritheciа periphaerica immersa inaequalitatem

corticis exterioris efficiunt. Pulvinulus cylindricus tres lineas altus, 1½ latus. Sparsim nec approximati occurrunt pulvinuli in cortice. Quodam modo affinis S. rubiginosae.

*1179. 33. S. DECORTICATA, L. v. S., quanquam affinis S. rubiginosae tamen spectat ad Sphaerias connatas. Ad ligna et in cortice. Primum ex Nova Anglia misit Dr Torrey, nunc copiosior, Bethl.

S. subpulvinata, applanata praesertim in ligno orbato, minus in cortice; externa superficie griseo-rubiginosa, tuberculis rugosis sphaerulaeformibus dense tecta, ad instar ostiolorum, ita ut inde exasperata apparet nigris granulis: exterioris corticis ceterum expers. Peritheciis periphaericis, pluribus seriebus in stromate rubiginoso-fuligineo immersis, ovato globosis. Pulvinulis subrotundis aut difformibus, ¼ uncialibus saepe confluentibus.

*1180. 34. S. TRANSVERSA, L. v. S., Mauch Chunk transversim erumpens in trunco Betuli carpinifolii rarior.

S. magna, subpulvinata, subimmersa in cortice et pulvinatim prorumpens, difformiter aut turbinatim angulata. Superficie irregulariter rugosa aut aequabili nigra. Peritheciis ovatis, periphaericis, intus splendenti-nigris. Stromate nigrofusco pulverulenta. Ostiolis manifestis prominentibus planoconicis. Unciali longitudine, crassitie ¼ unciali.

β Hypocreae.

1181. 35. S. *rufa*, F. 26, Syn. Car. 21, et. Pennsylv.

*1182. 36. S. *gelatinosa*, F. 27, in Sambuco, Bethlehem.

1183. 37. S. STEREORUM, L. v. S., Jour. of Acad. p. 12 et 13, in hymenio et pileo Thelephorae fasciatae, L. v. S., affinis prioribus, sed major. Forma ad *glebosas*, Bethl.

S. undulato-confluens, applanata, ambitu sublobato, superficie plicata, subpulvinata, colore ex incarnato-brunneo: junior tomento albo basilari velata et tum magis pulvinata. Interdum solitaria; plerumque autem confluens serie longitudinali in plicis Thelephorae cui insidet. Substantia, quanquam non gelatinosa, tamen mollior. Peritheciis in superficie granulatim prominulis, mere corticalibus, i. e. stromati albido subjacenti, non immersis, manifestim ostiolatis, spargentibus pulverem seminalem copiosam albidam. Ad longitudinem uncialem saepe confluunt pulvinuli, 3—4 lin. lati; margine sublibero.

Trib. 4. CONNATAE.

α Hypocreae.

*1184. 38. S. *lactea*, F. 29, ad radices truncorum in terra et interiori cortice, Bethlehem.

1185. 39. S. *citrina*, F. 30, Syn. Car. 30, etiam Pennsylv.

1186. 40. S. *rosea*, F. 31, Syn. Car. 31, rara etiam Bethl.

1187. 41. S. *ochracea*, F. 30, β, Syn. Car. 32, Salem.

*1188. 42. S. STERILIOR, L. v. S., pulcherrima, super folia et dejectamenta locis umbrosissimis effusa, Bethl.

S. substantia primum molliuscula, longe lateque effusa, applanata, superficie longitudinaliter striata, ex incarnato-lutescenti. Sicca, margine tenerrimo byssoideo ex intertextis fibris filamentosis praedita; et his laeviter omnino tecta apparet. Intus demum alba carnoso-cornea. Peritheciis raris vix rite formatis in nostris. Foliis, capsulis, amentis, dejectis increscit ambitu unciali et crassitie bilineari.

1189. 43. S. *lutcovirens*, F. 35, Syn. Car. 33, et. Pennsylv.

1190. 44. S. LACIFLUORUM, L. v. S., Syn. Car. 34, F. 32, rarior obvia in Pennsylv.

1191. 45. S. HYALINA, L. v. S., Syn. Car. 35, F. 36, in monte Pocono frequens occurrit distinctissima haec species.

*1192. 46. S. TUBERICOLA, L. v. S., in exoleto Tubere albo infestans corticem exteriorem, Pocono inventa.

S. effusa, tenuis, fusco-nigrescens, vix ambitu determinato. Peritheciis primo subimmersis, demum fere omnino prominulis, nigrofuscis, rugoso-tuberculatis, minutis, subconicis, dense aggregatis, intus omnino similibus prioribus, demum pulvere sparso-cavis.

β Hypoxylae.

1193. 47. S. *rubiginosa*, F. 37, Syn. Car. 17, etiam Pennsylv.

1194. 48. S. PERFORATA, L. v. S., Syn. Car. 45, vulgaris et. Bethl., Fr. 38.
1195. 49. S. *atropurpurea*, F. 39, Syn. Car. 36, etiam Bethl.
1196. 50. S. *serpens*, F. 40, Syn. Car. 39, vulgatiss. et Pennsylv.
1197. 51. S. COLLICULOSA, L. v. S., Syn. Car. 82, F. 41, rara Bethl.
*1198. 52. S. *coprophila*, F. 42, Salem rara sed distinctissima in ligno dejecto stercore tecto.
*1199. 53. S. *confluens*, F. 43, passim Bethl.
1200. 54. S. SASSAFRAS, L. v. S., Syn. Car. 87, freq. et Bethl.
*1201. 55. S. *atramentosa*, F. 49, rarius Salem et Bethl.
1202. 56. S. *incrustans*, F. 46, Bethl. lignis mollioribus.
1203. 57. S. AFFLATA, L. v. S., Syn. Car. 63, F. 50, etiam Bethl.
*1204. 58. S. TURBINULATA, L. v. S., in ligno fagineo montis Pocono, Pennsylv.

S. turbinato-pulvinata, applanata, subconfluens, tamen pulvinulis semper distinctis. Peritheciis non periphaericis sed per totum stroma ad basin usque dispersis majoribus. Superficie externa granulata, pulveraceo-rugosa, ostiolis minutis prominulis. Stromate parco, ob magnitudinem peritheciorum, e fuligineso albido. Pulvinuli seriatim siti, quasi literas hebraicas formant, et insident crustae nigrae in cortice effusae.

*1205. 59. S. ILLITA, L. v. S., non infrequens ad latera perpendicularia truncorum praesertim Platani, fere omnino eos plagis latis inaequabilibus confluentibus investiens, Bethl.

S. latissime effusa, confluens, stratis saepe superimpositis, sistens plagas subeffiguratas, ligno emollito quasi illitas : superficie superna undulata inaequabili, primum eleganter olivaceo virente, demum nigra. Peritheciis majusculis, granulatim prominentibus, coronatis ostiolis acutis conicis aut indistinctis ; ceterum crasse corticatis, intus cavis et ob magnitudinem stromate parco albescenti circumdatis.

*1206. 60. S. EXARATA, L. v. S., in cortice ramorum juniorum Jugl. tomentosae, Salem et Bethl.

S. effiguratim effusa, quasi longitudinaliter sulcis imis parallelis in superficie exarata—primum epidermide subtecta, quas in sulcis persistit. Peritheciis valde prominulis in summa juga sulcorum, irregularibus, e nigrofuscis, nigropapillatis, majusculis, monostichis, stromate parco circumdatis. Interdum sulcis confluentibus. In ambitu margine sterili, subrepando praedita ; crustae subjacenti, ex substantia corticali nigrifacta formata, insidet.

1207. 61. S. HYDNICOLA, L. v. S., Jour. of Acad. p. 14, Tab. II. f. 9, rarior in subulis jam corruptis Hydnorum, Bethl.

S. crassa, brevis, subrepanda, satis in superficie elevata, passim confluens. Superficie externa aterrima, undulata, a peritheciis subjacentibus, depressa, granulosa. Peritheciis magnis subdistantibus, immersis in stromate albo-lutescenti, monostichis, velo aut sacculo brunneo instructis. Ostiolis papillatis, prominulis. Subuli Hydni saepe cum stromate concrescunt : tum inferior pars quasi pedicellum crassum exhibet. Substantia Stromatis manifestim suberosa. Diametro vix 2—3 lineas excedit. Affinitas quaedam cum S. uda adest.

*1208. 62. S. CALLOSTROMA, L. v. S., Jour. Acad. Tab. II. f. 10, ligno et cortice Lauri aestivalis, Bethl. freq. nec alibi.

S. irregulariter effusa—ad longitudinem et latitudinem 2—3 unciarum ; etiam occurrit pulvinulis minoribus subturbinatis, seriatim approximatis nec revera confluentibus—satis similis inde S. *turbinulatae*. Specimina effusa, primo obtutu, referunt Sphaeriam maximam simplicem, contigue acervatam. At transversim secta, conex communis quo connata sunt, in conspectum venit, extus niger. Superficie inaequali ; ex peritheciis subelevatis, granulosa, punctato-rugosa. Peritheciis, externe apice truncato in ostiola obtusiora, subconice elevato, stromate immersis interne grumoso, colore vivide rubro-ochraceo, parciori aut copiosiori ; corticatis, ovalibus et irregularibus, sacculo splendenti atro—abientibus in ostiola per ductum conspicuum. Stroma coloratum numquam deest, nec in fere simplicibus pulvinulis singulum tantum perithecium interdum continentibus.

*1209. 63. S. FUSCOPURPUREA, L. v. S., Jour. of Acad. Tab. II. f. 11, lignis emollitis aeque ac cortice increscit, Sal. et Bethl.

S. effiguratim effusa, margine plerumque sterili, semper longitudinaliter serpens. Cortice externo intus atro nitente duriusculo, superficie eleganter purpureo, demum purpureo fuscescent, regulariter granulosa ex subjacentibus peritheciis. Peritheciis, non papillatis, polystichis, oblongo-ovatis, crebris, minoribus, velo interno albido, immersis in Stromate atro-nitente. Ligno tenuiter tantum

illita, circumcirca atrotincto. Inseparabiliter adnata. Uncialem longitudinem occupat, saepe praeamans loca excavata ligni. In cortice multo elevatior et quasi tuberculosa.

*1210. 64. S. INVESTIENS, L. v. S., passim Salem ac Bethlehem, in lignis non duris, exsiccatis decorticatis; priori affinis.

S. insuper crustam crescit atram, tenuem, in ambitu longe lateque lignum atrotingentem et sterilem, et quasi investit totum lignum, cum ejus rimis, elevatioribus, cavitatibus, &c. pallio granuloso aterrimo, sensim abiente in crustam. Peritheciis dense stipatis, regulariter oblongis, ad basin stromatis penetrantibus, parcissimi et tantum superne perceptibilis; in superficie externa, rugulosa, subconice elevatis, ostiolo papillato deciduo praeditis. Plagas sistit 2—3 unciales longitudine ac latitudine.

*1211. 65. S. GREGALIS, L. v. S., rariter Carolina obvia in ligno udo molli.

S. late effusa insuper crustam inaequabilem e nigrofuscentem referens sphaerias simplices aggregatas. Peritheciis tamen majusculis valde prominulis quasi applanato-convexis, ex approximatione varie compressis, connexis crusta tenui, nigrofuscis, primum papillatis demum pertusis, papilla decidua, superficie rugosis, serie insertis stromati rubro-fusco aut nigro simplici. Perithecia destructa et diffracta saepe dimidiatim manent in crusta inania.

*1212. 66. S. XANTHOSTROMA, L. v. S., Seriatim erumpens e rimis ramorum decorticatorum Quercus, Bethlehem.

S. insidens crustae tenui nullimodo effusae. Serie simplici protruduntur tubercula valde elevata difformia subconfluentia fusco-nigra, rugosa, vix ostiolata, majoribus mixtis minoribus in eadem caespite. Tuberculis verticaliter sectis, apparent perithecia interna, unum vel pluria in eodem tuberculo, majuscula, globosa, omnino immersa in stromati lutescenti, grumosa. Tubercula extus nigra. Passim ad uncialem longitudinem protracta est series.

*1213. 67. S. SPHAERIOSTOMA, L. v. S., rara Bethlehem in ligno carioso emollito.

S. brevis, subpulvinata, carbonacea, aterrima, 2—3 lineas longa, oblonga, utrinque acuminata, superficie externa longitudinaliter striata. In hac observantur ostiola sphaeriomorpha, sparsa globosa, ore rotundo pertusa, ductu longiusculo connexis cum peritheciis internis, ipso ligno immersis, absque ullo stromati genuino, tectis tamen externo cortici communi tenerrimo superficiali nigro. Peritheciis ipsis majusculis et massa atra repletis—ovatis. Haec massa, sub lente augentissima, ex sporidiis fere Melanconis constat.

*1214. 68. S. CATALPAE, L. v. S., in cortice Catalpae non rara Bethlehem, sed plerumque statu subexsoleta tantum mihi obvia.

S. seriatim e rimis corticis erumpens, primum rubiginosa, demum nigra. Caespitulis aut potius pulvinulis longitudinaliter confluentibus. Cortice externo subtenui superficie a subjacentibus peritheciis granulosa rubiginosa, quasi pulverulenta, demum nigro rugoso. Peritheciis crebris, stromate parco nigro, primum ostiolis papillatis, tum pertusis, ostiolis nempe deciduis. Multam habet affinitatem cum S. rugosa, sed minor nec effusa.

Trib. 5. GLEBOSAE.

1215. 69. S. *deusta*, F. 51, Syn. Car. 27, vulgatissima ad latera et radices truncorum, Carolinae, Pennsylv., New York, &c., ad 8 uncias lata.

β platyceps, quasi stipitata, Bethlehem.

γ effusa, fusca, tenuis, aequabiliter effusa, Salem.

Nota.—In Sphaeria deusta frequentior quam ceteris mihi obvia est forma initialis Sphaeriarum illa, qua referunt Thelephoram pulvere copioso filamentoso, colorato, plerumque aeruginoso virente onustam—de qua miror tam pauca verba in Friesii Systemate reperienda esse.

1216. 70. S. *Tubulina*, F. 52, Syn. Car. 29, etiam Pennsylv. plerumque in laeso arbore adhuc vigente.

*1217. 71. S. *succenturiata*, F. 55, rarius ad ram. Bethl.

*1218. 72. S. *spondylina*, F. 56, rarius in ram. querc. ibid.

1219. 73. S. *numularia*, F. 57, Syn. Car. 42, S. *clypeus*, inveni specimina Pennsylvania septam uncias longa et lata 3—4. In variis—praecipue Quercus.

1220. 74. S. *lenta*, F. 58, Syn. Car. 28, Salem et Bethl. Nostra quae exacte refert Iconem Todei, omnino ad Glebosas pertinet—et frequens est Bethl., affinis quidem Sphaeriae nostrae *contortae*, tamen ostiolis elevatis, forma regulari ac loco in ipso ligno nec in cortice distinguenda.

*1221. 75. S. SULPHUREA, L. v. S., rara, in cortice insidens, Salem nec Pennsylv.

S. tenuior, subcarnosa, demum exsiccata cornea, varie in margine tenui sulibero lobata, sulphurea. Stromate interno albido. Peritheciis crebris, globoso-depressis, immersis, luteofuscescentibus. Ostiolis concoloribus sparsim in depressis foveolis superficiei externae ceterum laevigatae sitis, papillatis. Recens omnino separabilis a cortice, quo ad semiuncialem longitudinem effusa, arcte sequens inaequalitates corticis subjacentis forma quadam subrotunda. Quodammodo S. *citrinae* affinis.

*1222. 76. S. Caries, L. v. S., non dissimilis var. γ S. deustae in lignis cariosis, Bethl.

S. vix separabilis, subrotunda aut elongatim effusa, crassiuscula, ambitu sublobato, aterrima. Superficie undulatim inaequali, rugosa. Ostiolis crebris, obtuse conicis, demum pertusis. Peritheciis majusculis subdepressis, in stromate parco nigrescente. Sphaeriam serpentem primo adspectu referens. Longitudine semi—aut unciali. An hujus tribus ? tamen superficialis est.

*1223. 77. S. quadrata, L. v. S., insuper corticem Rhoidum variorum Bethl.

S. crassa, elevata, abbreviata, plus minus quadrata, tamen saepe irregulariter sublobata ; basi affixa cortici, et in ambitu praedita margine acutiusculo. Superne applanato-undulata, rugosa. Peritheciis paululum tantum circa ostiola in superficie prominulis, majusculis, pyriformibus, ime immersis in stromate albido-pallido, nec tamen ad basin usque. Ostiolis brevissimis, apertis, pertusis. Primum sordide olivacea, demum nigra. Pulvinuli minores tam crassi, ut quasi cupulati stipitati apparent.

*1224. 78. S. contorta, L. v. S., frequens in Corticibus Quercus et Pyri Mali in Carolina, Pennsylv. et New York.

S. cortice solummodo stipiti papillaeformi affixa, quamvis arcte illi adpressa, libera in ambitu varie lobata, et omnino lobis contortis, fere Lichenis ad instar. Crusta corticali nigra subtus badia, includitur Stroma albo-lutescens, subpulverulentum centro satis crassum, in ambitu attenuatum. Peritheciis crebris minutis globosis, sub hoc cortici externo nidulantibus, non ime immersis stromati, in superficie inde subgranuloso subelevatis, irregulariter. Ostiolis minutis. Inferne cortex sterilis evadit. Colore primum viridi-atro, mox nigrescente. Sphaeria tota ad quartam partem unciae extensa. Saepe pluria individua caespitosim aggregata sunt.

Affinis S. lentae nostrae sed multo major. Eximia species.

*1225. 79. S. sublobata, L. v. S., ex eadem familia S. lentae ; in cortice Platani, Bethl.

S. minor, elevata, scutellaeformis, levissime insidens, margine obtuso, lobato-repando, ex atro subolivascens. Superficie applanata, rugulosa. Peritheciis subperiphaericis monostichis lutescentibus, immersis stromate lutescenti. Ostiolis impressis. Diametrum 2—3 linearum non excedit.

*1226. 80. S. subaffixa, L. v. S., primo adspectu varietatem S. stigmatis refert. Frequens in ramis dejectis pyrinis Bethlehem.

S. transversim subambiens ramulos, crassa, elevata, ligno adnata, more S. numulariae, applanata, plerumque orbiculata, margine sterili, sed non libero. Superficie externa subrugosa atra. Peritheciis, stipatis, oblongis, stromate parco circumdatis. Ostiolis crassiusculis, non impressis, conice protrusis. Long. et lat ½—1 unciali; saepe confluens. Primum epidermide cincta, demum denudata.

*1227. 81. S. Artemisiae, L. v. S., proxima S. repandae F. in emortuis Artemisiarum ram. Bethl.

S. minor, bilinearis, ovata, subangulata, subcupulata et marginata ex epidermide stellatim revoluta erumpens, 2—3 confluentes. Aterrima disco rugoso opaco, ostiolis parum prominentibus umbilicatis crebris. Stromate aterrimo, in quo nidulant perithecia globosa minuta cava. Tota sphaeria quasi libera, insidens libro corticali, utrinque nigra, rugosa. Non omnino confluens sed potius invicem adpressae sunt sphaerulae.

Trib. 6. Lignosae.

1228. 82. S. *bullata*, F. 59, Syn. Car. 55, etiam Bethl. Coryl.

1229. 83. S. *undulata*, F. 60, Syn. Car. 40, frequens et. Bethl.

1230. 84. S. *stigma*, F. 61, Syn. Car. 41, frequentissima ubique.

β *quadricocca*, rarior Pennsylv.

γ *decorticata*, rarior ibidem.

Mire variat haec species. Num et S. *subaffixa* nostra varietas sit hujus ?

1231. 85. S. platystoma, L. v. S., Syn. Car. 43, F. 62, freq. et Pennsylv.

1232. 86. S. atropunctata, L. v. S , Syn. Car. 44, F. 63, multo rarior occurrit haec species memorabilis Pennsylvania quam Carolina.

1233. 87. S. ROBINIAE, L. v. S., Syn. Car. 61, F. 65, frequens etiam Pennsylvania—sed valde polymorpha saepissime Sphaeriam alienae sectionis referens.

*1234. 88. S. *pilulifera*, F. 66, in truncis Acerinis Salem et Pennsylvania passim.

*1235. 89. S. *rhytostoma*, F. 67, distinctissima in cortice trunci Pruni hyemalis Bethlehem rarius.

*1236. 90. S. *euphoraea*, F. 69, vulgaris in quercinis ramis etiam fagineis Bethl.

1237. 91. S. *disciformis*, F. 68, Syn. Car. 31, vulgatissima.

*1238. 92. S. ALBOPRUINOSA, L. v. S., cum sequente, affinis duabus prioribus. In ramulis fagineis, New Jersey obvia.

S. orbicularis, primum plana, demum elevato-convexa, cortice stellatim cincta, disco primum dense albo-pruinoso, pulverulento, demum subfuscescente. Ostiolis quasi in poris sparsis impressis. Peritheciis tenuiter corticatis, ovatis, in collum nigrum perforatum attenuatis. Stromate albo-ceraceo. Minor est S. disciformi.

*1239. 93. S. VIRESCENS, L. v. S., colore bene distincta a S. disciformi persistente viridi, passim Carolina et Pennsylv. ramis junioribus.

S. orbiculata, major, valde elevata, tamen applanata. Disco omnino tecto pruina aut pulvere luteo-virenti, demum quidem detergibili, sed colorem servans viridem. Peritheciis paucis majusculis, globoso depressis; tegumento corticali crasso nigro praeditis, in collum breviter attenuatis, stromate candido-ceraceo circumdatis. Ostiolis nigris quadricoccis in superficie virenti prominulis. Ad basi arcte cincta epidermide non stellatim fisso.

*1240. 94. S. *aspersa*, F. 70, var *β* fusca. Major fungo Friesii, ceterum quadrans. Bethlehem in quercinis ramis.

*1241. 95. S. *favacea*, F. 71, frequens, Bethlehem et Salem.

1242. 96. S. *verrucaeformis*, F. 72, Syn. Car. 56 et Bethl.

1243. 97. S. CEPHALANTHI, L. v. S., Syn. Car. 59, F. 73, freq. et Bethl.

1244. 98. S. LIRIODENDRI, L. v. S., Syn. Car. 60, F. 74, nondum Pennsylv.

1245. 99. S. RHOIS, L. v. S., Syn. Car. 62, F. 75, frequens in Rhoi radicante etiam Pennsylvania.

*1246. 100. S. *flavovirens*, F. 76, ex amicissimo Torrey solummodo accepi in cortice Betulae populifoliae ex Nova Anglia.

*1247. 101. S. *prorumpens*, F. 77, in ramis Robiniae Bethl.

1248. 102. S. *uda*, F. 78, Syn. Car. 81, frequens et. Bethl.

*1249. 103. S. DISCRETA, L. v. S. Frequenter per corticem ad ipsum lignum penetrans, cui adnatum, in truncis et ramis praesertim majoribus. Malorum (rarissime in Carolina) mihi obvia est species distinctissima. Interdum occurrit remanens et vigens in ipso ligno, cortice omnino dejecto, plerumque per corticem penetrat. Major, nulli nisi sequenti affinis. Olim amicis perperam ut S. nostra *discincola* caroliniana rarissima, nec Pennsylvania inventa communicavi.

S. abnormis orbiculata, cortice concrescens et per corticem penetrans, nigro-circumscripta, basi firmiter ligno ipso affixa. Quasi pyxidem format e crusta nigro-ferruginea confecta, basin versus contractam in pedicellum crassum nigro circumscriptum in ligno. Tamen faciliter e ligno separabilis, linquens orbiculum nigro ei circumscriptum in loco, basi pyxidis aut cupulae separata planissima. Cupula aut pyxis perithecia includens omnino lignosa, ferruginea, e massa corticali. Disco $\frac{1}{4}$ unciali, marginato, concavo ex albo-cinerascente, subpurpurascente crustaceo frustuloso, stellatim cincto frustulis epidermidis inseparabiliter adhaerentibus. Ostiolis papillatis in disco vix prominulis. Peritheciis majusculis ovatis monostichis lineam longis, collo in ostiola attenuatis, immersis in stromate albidiori immixta lignoso. Tota sphaeria saepe et $\frac{1}{4}$ unc. alta ac lata. Copiosim infestat ramos diu persistens—primum per corticem penetrans et quasi verrucis excavatis superficiem variolans, demum ramum deorbans.

*1250. 104. S. EXCAVATA, L. v. S. Affinis priori, sed nunquam ex cortice separabilis, transversim erumpens, rarior in Cortice Prunorum, Bethl.

S. elliptico-orbiculata, cortice non stellatim sed quasi margine acuto subelevato cincta, et cum epidermide protusa. Disco ime excavato concava, nigra, non in disco crustacea ut prior, foveolis autem multis minutis sparsis punctata, in quorum fundo nidulant ostiola. Ceterum ut prior cortice quodam proprio nigro pyxidiforme inclusa, ad ipsum lignum penetrans, nec tamen eadem altitudine, nam vix dimidiam partem excedit, nunquam formam substipitatum exhibens. Cupula pyxidiformis parte inferiori farcta pseudo stromate lignoso—superiori magis vero stromate. In hac nidulant perithecia rariora majuscula pyriformia, in collum splendentem nigrum attenuata, occupantia mediam

partem stromatis. Magnitudine prioris. Species ambo valde memorabiles, ulterior multo rarius quam prior.

*1251. 105. S. SUBCONCAVA, L. v. S., etiam affinis prioribus sed multo minor: gregatim et saepe confluens prorumpit ex ramis Viburni dentati, Bethl.

S. minor (1—3 lin.) elevata, erumpens, undique cincta cortice fisso, includens quasi in cortice crustaceo nigro proprio, perithecia pauca majuscula, globoso-depressa, fere totam Sphaeriam interne occupantia, stromatis circumdantis fere expertia. Disco subconcavo, subrugoso, atro. Ostiolis globoso-papillatis, elevatis, raris, concoloribus, interdum confluentibus—collo breviusculo connexis cum peritheciis, sacculo albo distincto intus praeditis.

*1251. 106. S. SMILACICOLA, L. v. S., rarior in emortuis ramis Smilacis rotundifoliae, Salem.

S. subpulvinatim effusa, epidermide insidens, margine quoddam sterili sublobato in ambitu praedita, quo arcte adhaeret ligno—lineam nigram linquens. Peritheciis paucis, prominulis in superficie nigra, intus nigris aut nigrofuscis. Stromate parco pulverulento. Longitudine 1—3 lineari occurrit, saepe in centro adeo elevata ut formam subconicam induit.

*1252. 107. S. GRISEA, L. v. S., rarior in lignis cortice orbatis—S. stigmatis vicinitate, Bethl.

S. oblonga, effusa, subconcava, ligno innato-immersa utrinque acuminata, undique et ime linea nigra circumscripta, medio satis crassa et ibi exhibens stroma albo-griseum, in ambitu tenuior, stromate vix distinguendo. Peritheciis applanatis, crebris, minutissimis, nigris, stromati immersis. Superficie externa albogrisea, frustulatim rimosa, ostiolis subumbonatis obtusis griseis prominentibus. Uncialem diametrum saepe attingit.

*1253. 108. S. SPISSA, L. v. S., in ligno exsiccato rimoso quercino, Bethl. satis frequens.

S. longitudinaliter rimis ligni quasi inspissa, valde angusta et utrinque acuminata, nigrescens. Medio satis elevato, superficie e peritheciis prominentibus, valde rugosa. Stromate vix ullo. Peritheciis ipso ligno immersis, ostiolis subconice elevatis. Saepe ad semiunciam protracta.

*1254. 109. S. CONCOLOR, L. v. S., in ramis Vaccinii corymbosi Bethlehem sub epidermide.

S. more crescendi Sph. stigmati approximatur; multo minor, undulatim effusa, tenuis, ½ lineari crassitie; superficie quanquam undulata, tamen laevi, et omnino concolor libro, rufo-brunnea, quasi ut tumor illi innata. Interdum cinerascit; seriatim punctata ostiolis minutis nigris subimpressis. Stromate subpulverulento albescenti. Peritheciis densis nigris ovatis, invicem adpressis, intus nitentibus. Omnino memorabilis.

*1255. 110. S. ENTEROXANTHA, L. v. S., ex ramis dejectis Castaneorum prorumpens, Bethl.

S. epidermide stellatim fissa cincta, valde elevata, turbinato-difformis, prorumpens pulvinulis subconfluentibus, valde tortis et compressis, extus basin versus nigrescentibus, parte superiori intumescentet-urbinato-fuscescentibus, plicato-rugosis. Ostiolis sparsis raris punctiformibus. Peritheciis majusculis obovatis compresso-stipatis, immersis stromate flavo et rubro tincto pulveraceo. Cortice proprio peritheciorum aterrimo. Gregatim crescit pulvinulis plerumque bilinearibus.

*1256. 111. S. RIBESIA, L. v. S., rarissima in truncis emortuis Rib. rubri. Salem inventa. Non eadem cum Dothidea F.

S. effusa, confluens e pluribus pulvinulis aggregatis. Superne e copia ostiolorum prominentium rugosissima. Ostiolis ipsis crassis brevibus, difformibus, ore longitudinaliter aperto, hysteriiforme. Peritheciis majusculis, plerumque obovatis in stromate parco subalbescenti. Prorumpens ex epidermide, sed ligno ipso adnata plagis, ad longitudinem uncialem, ¼ unciali latitudine confluentibus.

Trib. 7. VERSATILES.

*1257. 112. S. *scabrosa*, F. 79, passim ad ligna Bethl.

1258. 113. S. *podoides*, F. 79, *β*, Syn. Car. 48, freq. et Bethl.

*1259. 114. S. *irregularis*, F. 80, rara in querc. ram. Bethl.

1260. 115. S. *friabilis*, F. 81, Syn. Car. 53, etiam Bethlehem.

1261. 116. S. *sordida*, F. 82, Syn. Car. 52, vulgaris Bethl.

1262. 117. S. *quercina*, F. 84, Syn. Car. 50, vulgaris Bethl.

*1263. 118. S. *lanciformis*, F. 85, passim ad cortices, Bethl.

1264. 119. S. *ferruginea*, F. 86, Syn. Car. 89, in lignis Castan freq.

*1265. 120. S. *versatilis*, F. 90, traversim in Pruno Bethl.

*1266. 121. S. *ceratosperma*, F. 81, Salem et Bethl.

*1267. 122. S. *Hystrix*, F. 89, rarior in Acerinis, Salem.

1268. 123. S. *insitiva*, F. 93, Syn. Car. 37, frequens in Vitibus, Salem ac Pennsylv.

*1269. 124. S. RADICALIS, L. v. S., rarissime in radicibus emersis Fagorum Salem.

S. minuta, prorumpens, pulvinulis minoribus cinnabarinis, irregularibus, subgyrosis (S. gyrosam habitu revocantibus). Sub crusta cinnabarina externa, cortice proprio atro-nitenti. Ostiolis cylindricis, intus aterrimis, extus cinnabarinis, passim in superficie elevatis, faciliter deciduis—unde superficies atropunctato evadit, ob ductum atro-nitentem quo peritheciis connectuntur ostiola. Stromate subpulverulento lutescenti. Peritheciis minutis atris stromati irregulariter immersis. Pulvinuli vix excedunt bilinearem longitudinem et subrotundi sunt, gregarie erumpunt ex cortice radicum, subinde confluentes.

*1270. 125. S. ANNULANS, L. v. S., rarior in ramulis decorticatis variis lignis mollioribus, annulatim ramulum cingens inventa Salem et Bethl.

S. subpustulata, annulatim confluens circum circa ramulum decorticatum, rarius solitaria. Pulvinulus quisque formam induit subconico-truncatam, ceterum lanciformis, concrescens cum fibris ligni, iisque longitudinaliter subtectus. In truncatura prominent ostiola, crebra, crassa, brevia, macrostomata. Peritheciis in stromate albo, collis atris brevibus in ostiola abientibus. Lignum saepe circum circa crusta quadam nigra induit. Invenitur etiam interdum longitudinaliter confluens, nec annulatim et saepe vestita in superficie pube fuscescente. Linea nigra in ligno circumscripta.

*1271. 126. S. COLLECTA, L. v. S., frequens in ramis junioribus Mori albae Bethl.

S. minor, sparsa non confluens, pulvinulis subrotundis convexis, elevatis, atris, subruguloso-punctatis in superficie; Ostiolis indistinctis prominulis, stellatim epidermide cinctis. Peritheciis minutis globosis in stromate satis crasso aterrimo, sed non ad basin immersis. Pulvinulis 1½ lin. longis et latis.

*1272. 127. S. VARIOLOSA, L. v. S., frequens in ramis junioribus Populi italici, &c. ex epidermide prorumpens, longe lateque confluens, et eam quasi variolosum reddens. Bethlebem.

S. gregarie confluens, primum omnino epidermide tecta, nisi circum ostiola, demum subprorumpens, epidermide tamen hinc inde adhaerente. Pulvinulis satis elevatis, atris, rugosis, irregularibus. Ostiolis crebris, brevibus, difformibus. Peritheciis obovatis aut pyriformibus majusculis, immersis, pluribus seriebus, stromate candido. Extus atra, juniore aetate tamen cum ostiolis cinerascente-pulveracea.

*1273. 128. S. SUBCONFLUENS, L. v. S., transversim in ramis putridis Celastri prorumpens Bethlehem. Affinis secundum descriptionem S. dispari Friesii. Ambit inter Versatiles et Confluentes.

S. transversim prorumpens aut longitudinaliter, forma orbiculata aut difformi, aterrima, valde protuberans, basi tantum epidermide cincta, crusta nigra circum circa effusa sub epidermide. In superiori parte pulvinuli aut caespites, perithecia subirregularia sed plerumque angulata, angulis acutis, adeo prominent, ut fere singula referunt, punctato-rugosa, papillata, demum pertusa. Intus perithecia globoso-ovata se ostendunt, immersa stromate parco, ex corticali substantia, aut ex subjacenti crusta nigra orto.

*1274. 129. S. OBSCURA, L. v. S., rarius obvia in lignis quercinis igni destinatis, Bethl.

S. majuscula, sparsa, immersa in libro, per epidermidem stellatim fissam prorumpens. Crusta fuliginea late effusa tecta, tubercula efficit satis elevata, obtusa, subconica aut difformia, fusco-ferruginea, ostiolis indistinctis. Peritheciis flexuoso-gyrosis difformibus, fuligineis, per ductum album et excavatum cum tuberculo connexis. Stromate ex materia corticis.

*1275. 130. S. SAMBUCIVORA, L. v. S. Copia ingenti infestans ramos dejectos minore Sambuci canadensis. Affinis S. scabrosae, Bethlehem.

S. emergens, demum superficialis, nigricans, longitudinaliter aggregatim confluens, quasi maculas elatiores efficiens, demum omnino cortice dejecto, superficie inaequali rugosa nec tamen crustacea exhibetur. Tuberculis singulis ovatis aut difformibus. Peritheciis majusculis, numerosis, polystichis, nigris, stipatis in quoque tuberculo. Stromate candido pulverulento statu vegeto circumdata. Ostiolis polygonis, prominulis, demum irregularibus, ime umbilicatis. Pro more secundum locum in ipso ligno aut cortice mire variat forma. Singulis tuberculis 2—3 linearis 1 alt.—sed plerumque occupantibus plures uncias longitudinaliter aggregatis.

Trib. 8. CONCRESCENTES.

1276. 131. S. DISCINCOLA, L. v. S., Fr. 97, Syn. Car. 63. Hanc speciem distinctissimam nunquam

Pennsylvania inveni—et quidem specimina Caroliniana omnia Botanophilis Europaeis communicavi, ita ut mihi nunc desunt. Omnino alia quam S. *discreta* hujus libelli—olim pro ea sumpta.

1277. 132. S. *spinosa*, F. 98, Syn. Car. 84 et 85, nam S. horrida nil aliud. At sententia Friesii, p. 369, sequentem etiam nil aliud esse mihi non placet. Species est loco, forma perdistincta frequens Pennsylv.

1278. 133. S. LIMAEFORMIS, L. v. S., Syn. Car. 47 et 86, S. *penicillosa* cum priori jungenda sed non cum S. spinosa. Haec nostra nunquam in lignis, semper autem et quidem saepe ad 8—9 pedalem longitudinem in cortice crescit.

1279. 134. S. *spiculosa*, F. 99, Syn. Car. 83, rarius occurrit et in Pennsylvania ramis salicinis cortice orbatis.

1280. 135. S. *lata*, F. 100, Syn. Car. 66, vulgaris etiam Pennsylva. cum varietate *β polycocca*.

*1281. 136. S. *maura*, F. 101, frequens Bethlehem in ramis decorticatis.

*1282. 137. S. *lejoplaca*, F. 102, rarius, Hope, New Jersey.

*1283. 138. S. *miliaria*, F. 103, rarius in vetusto ligno ibidem.

*1284. 139. S. *decipiens*, F. 104, passim in cortice, Bethlehem.

*1285. 140. S. *subcutanea*, F. 105, sub epidermide juniorum ramorum Ribis, Bethl.

*1286. 141. S. *infernalis*, F. 106, optima species, Bethl.

1287. 142. S. ACULEATA, L. v. S., valde affinis S. spiculosae, sed semper et quidem frequentissime in caulibus emortuis maximarum Herbarum praesertim Phytolaccae, rarius Umbellatarum occurrit Bethl. ac Salem—longissime effusa.

S. longissime ac indeterminatim effusa, crusta tenui nigra, primum tecta epidermide tenerrimo per quem protruduntur ostiola longa teretia, initio tenui tum incrassata, et caulem talem tactu quasi aculeatum reddunt, demum epidermide orbata. Peritheciis omnino expertibus stromatis, ligno caulino ime immersis, depresso-globosis, atris, sparsis. Ostiolis longissimis, saepe aetate difformibus, decumbentibus ac diffractis. Perithecia nunquam prominent. Saepe circumdat caules ad pedalem longitudinem. Quanquam species caulicola, ob summam affinitatem cum ceteris hujus sectionis, nullimodo ab his separanda.

β artemisicola, paulo crassior omnibus partibus, in caulibus emortuis Artemisiarum Horti.

1288. 143. S. VIBURNI, L. v. S., Syn. Car. 58, F. 107, et. Pennsylv.

1289. 144. S. DIOSPYRI, L. v. S., Syn. Car. 57, F. 108, nondum Pennsylv.

1290. 145. S. VITICOLA, L. v. S., Syn. Car. 64, F. 109, non in Pennsylv.

1291. 146. S. *Fimeti*, F. 110, Syn. Car. 158, caute distinguenda a S. stercorea simplici. Carol. et Pennsylv.

*1292. 147. S. *lineata*, F. 111, rara Bethl. obvia.

1293. 148. S. AEQUILINEARIS, L. v. S., Syn. Car. 116, F. 113, solummodo Carolina in Berberidis canad.

*1294. 149. S. *oppansa*, F. 114. Ob crustam gelatinosam distincta. In cortice salicino, Bethl.

1295. 150. S. PANNOSA, L. v. S., Syn. Car. 172, F. 115 et. Bethl. elegans obvia.

*1296. 151. S. *floccosa*, F. 116, in Sambuci ramis, Bethl.

1297. 152. S. *velata*, F. 117, Syn. Car. 80, ramis tiliaceis Carol.

*1298. 153. S. *crustata*, F. 119, rarius Carolina in ramis.

*1299. 154. S. *subtecta*, F. 120, Bethlehem passim sub epiderm.

*1300. 155. S. *recondita*, L. v. S., sub epid. Ribis floridae Bethl.

S. primum cortice tecta, peritheciis ime reconditis in ligno, depresso-globosis, protrudentibus ostiola longissima rudia per corticem, passim per epidermidem prorumpentia et demum eum dejicientia. Tunc in conspectum venit crusta quadam nigra sub epidermide effusa indeterminatim, quae manifestim ex gelatina sporidifera sparsa orta est.

*1301. 156. S. CONCRESCENS, L. v. S., species admodum distincta solummodo obvia in emortuis ramulis *Ribidis aureae* Hortorum Bethl.

S. crusta quadam ex massa corticis orta nigro-fusca tecta ; transversim erumpens forma orbiculata aut utrinque angustata per epidermidem, disco quasi excavato, substellatim epidermide cincta et marginibus subelevatis praedito, bi- vel tri-lineari. In hac crusta, concrescunt perithecia numerosa, basi immersa, globoso-depressa, minuta, superne attenuata in ostiola cylindrica, crassiuscula, pro. minula. Peritheciis intus albo-farctis, demum formam mutantibus et quasi conico-cylindricis. Affinis S. reconditae, at habitu excavato disci bene distincta.

*1302. 157. S. Mori rubrae, L. v. S., in ligno putrido Mori rubrae Bethlehem. An ad Tribum Connatarum ?

S. nuda, crassiuscula, vix concrescens, sed semi-immersa, interdum plagis inaequalibus ½ uncialibus confluens, interdum subsimplex. Superficie valde inaequali rugosa, ostiolis subprominulis, perforatis. Peritheciis majusculis monostichis immersis stromati fuligineo-nigro. Extus tota nigra.

*1303. 158. S. elevans, L. v. S., in truncis denudatis Rhois glabri Bethlehem, secundum descriptionem affinis S. lignyotae Friesii.

S. tecta, sed non cortice, sed fibris ipsis ligni, quibuscum longe lateque assurgit, superficiem nigro-tingens et inaequalem reddens. Peritheciis stromate fuliginoso-pulverulento tectis, majusculis, globoso-depressis, circum ostiola majuscula quasi radiatim subcircinantibus. Superficies tactu exasparata ostiolis prominentibus.

*1304. 159. S. rivulosa, L. v. S., satis affinis S. maurae in dejectis Lauris aestiv. Bethl.

S. longissima, (pedalis) et lata, (uncialis) effusa, ligno primum subimmersa, inde ex fibris elevatis cinerascente, demum fere omnino emergens, ambitu effigurato, superficie rivulosa et undulata, provectiori aetate, longitudinaliter angustim sulcata, colliculosa et tunc aterrima. Ostiolis in sulcis prominentibus, atris, subcylindricis, longiusculis, apice subtruncatis, rugosis perforatis. Peritheciis majusculis globosis, arcte stipatis, Stromate fuligineo tectis, monostichis. Stroma superne albescit.

*1305. 160. S. elongato-compressa, L. v. S., seriatim provenit in ligno denudato, Bethl.

S. plagis abbreviatis, valde elevatis; primum subimmersis compressis, ac seriatim longitudinaliter confluentibus, rugosis subdifforme-ellipticis, centro compresso subconice elevato. Ostiolis difformibus parum prominentibus subglabris. Peritheciis globoso-depressis, paucis, majusculis fere expertibus stromatis, quod stroma ceterum nigrescit. Lignum quasi colliculosum reddit, sed non nigrescit inter plagas.

*1306. 161. S. confusa, L. v. S., in cortice et ligno Bethl.

S. late effusa, non ime immersa, concrescens, subeffigurata, atra. Peritheciis polystichis, superimpositis stromate fuliginoso, pulveraceo; obovatis, abientibus in ostiola rugosa subpyramidata angulato-aspera, demum pertusa.

*1307. 162. S. denigrata, L. v. S., in denudato ligno Rhododendr. max. Bethl.

S. late effusa, crustacea, crusta tenui nigra denigrans lignum. In hac observantur verrucae longitudinaliter elongatae ac parallelae subconfluentes ex congerie peritheciorum ortae, quae his immersae, et serie erumpunt per ostiola minuta difformia parum elevata. Peritheciis ipsis albo-farctis depresso-globosis, sparsis in massa crustae immersis.

*1308. 163. S. mela, L. v. S., aff. S. latae Bethl. in ligno quercino denudato.

S. longe lateque effusa, crusta nigra, parum elevata saepe (an a fungo parasitico) superficie sub dematiosa ; satis aequabili, aut tantum inaequabili ex subjacentis ligni rimis. Peritheciis nidulantibus in ipso ligno, non tamen ime immersis, globosis, subdepressis, extus fuscescentibus subnitentibus, collo longiusculo penetrantibus per crustam. Ostiolis conice polygonis, nigris, subsulcatis, elevatis.

Trib. 9. Circumscriptae.

1309. 164. S. Sacculus, L. v. S., Syn. Car. 26, F. 123, truncis majoribus Bignoniae radicantis Carolina nec alibi.

1310. 165. S. Bignoniae, L. v. S., Syn. Car. 25, F. pag. 379, Cl. Friesius imperfecta tantum specimina vidit. Loco citato diagnosis nostra et descriptio non bona.

S. mire varians. Junior pustulata ferrugineo-nigra, minor, conceptaculum formans sub corticem ceteris hujus tribus non dissimile, cortice fibroso subimmerso, ostiolis umbilicatis cylindricis prominentibus. Demum in formam oblongam concrescens at 1—2 unciarum longitudinem e rimis longitudinaliter prorumpens, apicibus conceptaculorum truncatis. In truncatura conspiciuntur ostiola brevia crassa irregularia. Peritheciis mediocribus stromati cinereo-carneo immersis.

*1311. 164. S. *gastrina*, F. 124, rara in ignoto ligno, Bethl.

1312. 165. S. *prunastri*, F. 126, Syn. Car. 91, etiam Pennsylv.

*1313. 166. S. *stellulata*, F. 128, in Ulmo et Platano, ibid.

*1314. 167. S. *enteroleuca*, F. 129, ramis denudatis, Bethl.

*1315. 168. S. *extensa*, F. 130, ibidem, Bethl.

*1316. 169. S. *anomia*, F. 131, frequenter occurrit in ramis Robiniae, Bethl.

*1317. 170. S. *monadelpha*, F. 132, rarior in fere destructis ramis Prunorum, Bethlehem, &c. Nova Anglia misit Torrey.

1318. 171. S. SCOPARIA, L. v. S., Syn. Car. 101, F. 125, rara Carolina.

*1319. 172. S. HALSEYANA, L. v. S., rarissima in cortice betulino ab amicissimo Abraham Halsey ex New York communicata.

S. major, pustulata, subrotunda, conceptaculis transversim confluentibus, ad longitudinem ac latitudinem semiuncialem, aterrimis, 2—3 lineas altis, apice plano-truncatis, undique tuberculosis. Ostiolis cylindricis, brevibus, confertis, cylindricis, crassiusculis, subtuberculosis. Primum epidermide tecta, quae semper arctim adhaeret. Peritheciis intus succenturatis polystichis, stromate albo-fuliginoso immersis—Stromate seorsum aucto, omnino fuligineo. Affinis S. scopariae, sed ostiola multo breviora, crassiora, et magis cum conceptaculo concrescentia.

*1320. 173. S. *haustellata*, F. 136, in quercinis ram. Bethl.

1321. 174. S. *syngenesia*, F. 133, Syn. Car. 99, tumida; et Bethl.

1322. 175. S. PUGILLUS, L. v. S., Syn. Car. 107, F. 135, in putrido ligno etiam Pennsylvania obvia, quanquam rara.

*1323. 176. S. *cerviculata*, F. 136, vulgaris Bethl.

*1324. 177. S. *fibrosa*, F. 139, in cortice Ulm. Bethl.

1325. 178. S. *corniculata*, F. 138, Syn. Car. 97, Carolina.

1326. 179. S. *Carpini*, (Betuli) F. 140, Syn. Car. 96, et. Pennsylv.

*1327. 180. S. *lixivia*, F. 141, in cortice Juglandis cinereae, Bethl.

1328. 181. S. JUGLANDICOLA, L. v. S., Syn. Car. 102, F. 142, etiam passim Pennsylv. in Juglandis tomentosae et albae cortice.

*1329. 182. S. FRUSTRUM CONI, L. v. S., rarius in radicibus arborum prominentibus, Bethl.

S. cortice innata, ex epidermide radicis prorumpens; conceptaculis nigris exacte forma frustrum coni referentibus, apice truncatis, furfure pulveraceo rubiginoso in truncatura tectis, ex quo prominent ostiola cylindrica perforata, nigra. Stromate intus omnino deficiente, conceptaculum totum expletum peritheciis pyriformibus arcte stipatis, quasi circinatim dispositis et in collum conjunctis, circumdatis materia corticali. Basi vix circumscripta.

*1330. 183. S. TOXICI, L. v. S., frequens in sarmentis et ramis Rhois radicantis.

S. conceptaculis majusculis, subrotundis, nigris rugosis, primum tectis, demum cortice orbatis, saepe longitudinaliter confluentibus. Ostiolis centro aggregatis, teretibus obtusis; interdum difformibus et apice quasi stellatis. Peritheciis oblongis, stipatis seorsum in collum junctis, fuligineis nec nigris. Stromate parco albescenti, demum fuligineo circumdatis. Basi conceptaculi clausa. Variat magnitudine.

*1331. 184. S. RUBINCOLA, L. v. S., frequens in stipitibus Rubi in hortis dejectis et jam fere consumptis putridine, Bethl.

S. interiori cortice adnata, demum excussata, foveolas linquens ; orbiculata, centro depressa ubi assurgunt ostiola rugosa ; gregatim confluens, priori satis affinis. Primum epidermide tecta et tam ime in cortice defossa ut sola ostiola prominent, demum assurgens ac omnino liberata. Peritheciis majusculis, paucis, depresso-globosis, stromate albo-pulverulento circumdatis. Conceptaculum interdum coronatum est unico ostiolo, cylindrico, ore dilatato—interdum pluribus divergentibus.

*1332. 185. S. ALLOSTOMA, L. v. S., in disco et ad latera trunci magni caesi Robiniae prope Lancaster obvia, valde polymorpha. Etiam ex Nova Anglia Dr Torrey communicavit. Primo adspectu conceptacula ubi maxime confluunt varietatem S. spinosae referunt.

S. primum ligno ipso immersa, longe lateque confluens, ostiolis tantum globoso-stellatis, prominentibus; demum assurgens et fere libera. Conceptaculis tum ut in prioribus, sed magis et quidem latitudine etiam confluentibus. Ostiolis rigidis, tereti-difformibus, apice plerumque dilatatis. Peritheciis majusculis, stipatis, fere omnino sine stromate, collo in ostiola abientibus. Plagae conceptaculorum confluentium, demum quasi crusta conjunctae et ei insidentes. Hoc modo crescendi maxime a prioribus distat.

*1333. 186. S. OLIGOSTOMA, L. v. S., frequens in interiori cortice ramorum Castaneorum epidermide orbato, Bethl.

S. minor, orbiculata, pustulata. Conceptaculo saepe concentrice annulato, medio depresso, nigro, in collum crassiusculum attenuato, in cujus apice conspiciuntur ostiola minuta, parum prominula, saepe

unicum. Peritheciis immersis stromati mere e corticis substantia ferrugineo, minutis adpressis, sacculo albo conspicuo. Versus basin conceptaculo subevanido. Affinis S. ferrugineae.

*1334. 187. S. AMORPHOSTOMA, L. v. S., rarius in cortice Gleditsiae, Bethl. cultae.

S. tecta, ostiolis solummodo prominulis, compresso-difformibus, corneis, tuberculosis, fuscescentibus, saepe quasi villosis (ex Cladosporio quodam parasitico?): ceterum conceptacula sparsa, cortice innata nec confluentia. Peritheciis majusculis pro ratione, globosis, in collum longiusculum junctis, et intus stromate fuliginoso circumdatis. Ut prior species basin versus conceptaculum quasi evanescentem habet.

*1335. 188. S. RADICIUM, L. v. S., ex radicibus arborum caesorum defossis ac aere expositis Bethl. prorumpens.

S. tuberculo aut conceptaculo nigro, basi subrotunda, subelevato, firmo, cortice nempe crasso, apice inaequaliter truncato. Peritheciis crebris, polystichis, oblongis et obovatis. Ostiolis cylindricis, stipatis, in disco demum sparsim aut densim protrusis. Stromate parco lutoso intersperso.

*1336. 189. S. CONSPURCATA, L. v. S., passim in ramis quercinis ad ignem destinatis, Bethl.

S. conceptaculo majusculo, nigro, sed externe massa quadam fuscescente conspurcato, basi effuso in crustam concolorem et eodem modo conspurcatam. Pluribus saepe confluentibus, sub epidermide rupto, et stellatim revoluto. Peritheciis majusculis, subcircinnantibus in conceptaculo, compressis, collis elongatis conjunctis, et stromate cinereo-fuscescente circumdatis, intus farctis massa subcornea. Disco convexo, nigro, primum fusco-pulveraceo longe protuberante, demum obliterato ostiolis crebris teretibus spinulosis, aterrimis.

*1337. 190. S. MODESTA, L. v. S., prorumpens sub epidermide juniori ramorum Ulmi Bethl.

S. Conceptaculo sublibere increscens libro corticis sub epidermide, tuberculum sistens rotundum subelevatum; demum prorumpens epidermide revoluto fisso cinctum. Disco nigro-fuscescente. Ostiolis nigris subprominulis, longiusculis, densis, ex tereti-conicis deciduis, in disco. Stromate cinereo albo quo nidulant perithecia. Diametro conceptaculi 2—3 lineari.

Trib. 10. INCUSAE.

1338. 191. S. *nivea*, F. 143, Syn. Car. 94, freq. in malis Bethl.

1339. 192. S. *leucostoma*, F. 145, Syn. Car. 95, in Persicis vulgata.

*1340. 193. S. *cincta*, F. 144, major priori, pustulata in ramis tenerrimis Carolina obvia.

*1341. 194. S. *melastoma*, F. 147, in Malo Bethlehem.

1342. 195. S. *microstoma*, F. 148, Syn. Car. 98, et. Pennsylv.

*1343. 196. S. *melasperma*, F. 153, Cortice Betul. Pennsylv.

1344. 197. S. *scutelluta*, F. 154, Syn. Car. 92 et. Pennsylv.

*1345. 198. S. *taleola*, F. 157, passim Bethl. ad ramos.

*1346. 199. S. *profusa*, F. 158, in juniorib. Robiniis Bethl.

*1347. 200. S. *dissepta*, F. 159, cortice betulino, Bethl.

1348. 201. S. *tessella*, F. 160, Syn. Car. 114, frequens etiam Pennsylv. in ramis salicinis.

Trib. 11. OBVALLATAE.

1349. 202. S. *ciliata*, F. 161, Syn. Car. 90, rara et Pennsylv.

*1350. 203. S. *tortuosa*, F. 162, rarissime obvia in ramo pineo Peridermio pini infesto, Camden, New Jersey.

1351. 204. S. *coronata*, F. 163, Syn. Car. 105, solummodo in Bignonia capreolata (non ut lapso calami in Synopsi dicitur in B. radicanti) Carolina.

1352. 205. S. LIQUIDAMBARIS, L. v. S., Syn. Car. 103, F. 165, ramulis junioribus Liquid. styraciflluae.

*1353. 206. S. COMPTONIAE, L. v. S., transversim erumpens ex rimis corticis Comptoniae, immersa interiori cortice Bethlehem.

S. subpustulata, prorumpens more S. tortuosae; tuberculo basi difformi, conice elevato, subtruncato, aterrimo, nigro-farcto. Peritheciis etiam nigro-farctis subcircinnantibus. Ostiolis rugosis longis acuminatis, conniventibus. Ambit inter hanc sectionem et sequentem.

*1354. 207. S. *decorticans*, F. 166, in Syringae ram. Bethl.

*1355. 208. S. *deformis*, F. 170, in ramis quercinis, Bethl.

*1356. 209. S. *leiphaemia*, F. 171, freq. Bethl. et Salem.

*1357. 210. S. *suffusa*, F. 172, in cortice Alni et Salicis, Bethl.

*1358. 211. S. *melastroma*, F. 173, cortice Ulmi Salem.

1359. 212. S. *turgida*, F. 175, Syn. Car. 109, *faginea*, Pennsylv. et Car.

*1360. 213. S. *clopima*, F. 176, in virgultis Bethlehem.

1361. 214. S. *salicina*, F. 177, Syn. Car. 114, et. Pennsylv.

1362. 215. S. VITIS, L. v. S., Syn. Car. 117, F. 178, rarior et. Bethl.

1363. 216. S. *capsularis*, F. 179, Syn. Car. 106, Carolina.

*1364. 217. S. *ambiens*, F. 182, vulgaris et. Pennsylv. et Carol.

*1365. 218. S. *leucopis*, F. 179, in ramis Syringae, Bethl.

1366. 219. S. *stilbostoma*, F. 182, Syn. Car. 111 et 113, et. Pennsylv.

*1367. 220. S. *tessera*, F. 183, rara in cortice Coryli Bethl.

*1368. 221. S. *dolosa*, F. 184, in emortuis ramis Celastri.

1369. 222. S. *Radula*, Syn. Pers., Syn. Car. 93. Passim a me olim amicis sub nomine S. *vulgatissimae* communicata. Nullimodo nostra ad S. leiphaemiam pertinet. Fere semper et quidem vulgatissima occurrit plagis latis longisque confluens sub epidermide et arcte tecta, ostiolis solummodo radulantibus plus minusve prominentibus—plerumque satis regulariter pentagonis. Peritheciis stromate albicanti, ex corticali massa, circumdatis—sine conceptaculo nec nigro-circumscriptis, majusculis. Caespites ostiolorum quasi seriatim prominent. Variis ramis, in populinis apprime.

*1370. 223. S. *sphinctrina*, F. 174, in cortice Catalpae et Juglandis nigrae rarior, Bethlehem.

*1371. 224. S. VARIOLARIA, L. v. S., frequens Bethlehem sub epidermide, v. c. Tiliarum.

S. subpustulata, confluens sub epidermide laevi plagis variolosis longis latisque, arcte tecta; ostiolis ex epidermide stellatim fisso prominentibus, in disco primum fuscescente demum obliterato, minus angulatis ac multo brevioribus quam in priori. Peritheciis quidem suberectis circinnantibus, stromate parco, albescente circumdatis absque conceptaculo. Linea nigra, plura individua, saepe totas plagas in ima cortice circumscribens, sectione horizontali facta, observatur. Multo minus super corticem elevata quam prior.

*1372. 225. S. PLATANI, L. v. S., frequentissima erumpens ex epidermide Platani, Bethl.

S. pustulata plagis maximis aggregata sub epidermide, sed pustulis singulis, multo minoribus quam in prioribus, non revera confluentibus: arcte tecta epidermide circum ostiola stellatim fisso. Ostiolis in fuscescenti disco, primum punctiformibus, demum subprominulis, tum disco obliterato. Stromate albescente multo crassiori quam in prioribus et interdum in disco prorumpente. Peritheciis aterrimis splendentibus per stroma quidem assurgentibus sed subtus in ipso cortice, absque stromate nidulantibus. Vix nigro-circumscripta.

*1373. 226. S. GONIOSTOMA, L. v. S., Syn. Car. 104, *pentagona*, non est S. pentagona Personi nec ad tribum Circinnatarum pertinet, omnino potius prioribus affinis. Seriatim ac pustulatim ex rimis corticis juniorum ramorum Sassafras, Bethlehem ac Salem prorumpit.

S. pustulata, arcte epidermide tecta, ostiolis pentagonis seu tetragonis stipatim prominulis, aterrimis, disco nullo. Peritheciis nigris erecto stipatis, circinnatim locatis in ipso cortice absque ullo stromati, junctis in collum breviusculum, quibusdam majusculis aliis multo minoribus: nullimodo circumscriptis.

*1374. 227. S. CONSEPTATA, L. v. S., sub cortice Gleditsiae, Bethl.

S. non pustulata, gregarie erumpens, sub epidermide subeffusa, disco primum fusco nigro convexo, demum obliterato, ostiolis, stellatim angulatis, parum prominentibus. Peritheciis variis subcircinnatim nidulantibus in stromate corticali, albo, absque ullo conceptaculo; sed pluribus caespitulis in unum conseptatis linea nigra, ime in corticem ad ipsum lignum penetrante.

*1375. 228. S. PAPYRIFERAE, L. v. S., frequens in junioribus ramis Mori papyriferae Bethl. cultae.

S. epidermide tecta, gregatim ambiens ramulos et valde elevans epidermidem, demum stellatim fissam, sub qua conspiciuntur pustulae, disco atro rugoso truncato protruso. Ostiolis demum brevibus, difformibus, umbilicatis in disco emergentibus. Peritheciis paucis, majusculis, globosis, in stromate lacteo albo, conceptaculo quasi incluso, nigro corticato. Caespitulis quidem parvis sed adeo elevatis, ut ramulum variolosum reddunt.

*1376. 229. S. CEANOTHI, L. v. S., frequens in emortuis stipitibus Ceanothi, Bethlehem.

S. subpustulata, arctim epidermide tecta, solis ostiolis prominentibus, crebris, aterrimis, nitentibus, teretibus, perforatis. Peritheciis suberecto-circinnantibus, in stromate corticali: albo-farctis, pyriformibus ac difformibus. Pustulae minutae. 1½ lineari diametro.

*1377. 230. S. INDISTINCTA, L. v. S., in ramis junioribus Sassafras. Proxima S. variolariae.

S. sparsa, sub epidermide tumidulosa et arcte ab epidermide, vix fissa, nec revoluta cincta. Ostiolis solis parum elevatis, angulatis, nigris, crassis, saepe succum nigrum spargentibus, prominentibus. Peritheciis tribus vel quatuor majusculis atris nidulantibus in stromate corticali vix colorato.

*1378. 231. S. QUADRIFIDA, L. v. S., in ramis et truncis Vaccinii corymbosi, Bethl.

S. primum obtecta, tractu longitudinali gregarie crescens et tuberculum corticale efficiens, bilineari latitudine, stellatim tectum epidermide adhaerente, satis elevatum. Ostiolis crassis brevibus aterrimis, plerumque quadrifidis, obtusis. Peritheciis majusculis, 3—4 numero, atro-nitentibus, nidulantibus in stromate mere corticali, ovatis, suberectis.

Trib. 12. CIRCINNATAE.

*1379. 232. S. *ciliatula*, F. 185, sub libro Betulae. Bethl.

1380. 233. S. *pulchella*, F. 186, Syn. Car. 108 frequens praesertim sub cortice Prunorum. Occurrit Bethlehem denudata et semipollicari diametro circinnans.

*1381. 234. S. *aperta*, F. 188, sub cortice Populi italicae, Bethl.

*1382. 235. S. *vasculosa*, F. 190, eximia ; Beth. in Pruno.

*1383. 236. S. *conjuncta*, F. 191, etiam in Prunis ibidem.

*1384. 237. S. *thelebola*, F. 193, in Junipero virg. juniori, ibid.

1385. 238. S. *umbilicata*, F. 194, Syn. Car. 113, et. Bethl.

1386. 239. S. *quaternata*, F. 195, Syn. Car. 110, et. Pennsylv.

*1387. 240. S. *furfuracea*, F. 196, in ramo Tiliae Bethl.

*1388. 241. S. *vestita*, F. 197, ramis Rib. floridae, Bethl.

*1389. 242. S. *acclinis*, F. 198, rara ramis Sassafras, Salem.

1390. 243. S. *convergens*, F. 199, Syn. Car. 112. In Pennsylv. plerumque obvia in ramis Rosae corymbosae.

*1391. 244. S. *pusilla*, F. 199, b. Bethlehem frequens obvia in societate S. velatae sub cortice Castanearum. Saepe ingenti copia aggregata. Olim pluribus sub alio nomine communicavi.

*1392. 245. S. *abnormis*, F. 200, rara Bethl. in Sambuco.

1393. 246. S. DIVERGENS, L. v. S., Syn. Car. 123, F. pag. 4:6, rara in Liquidambari Carolina. Omnino ad hunc tribum pertinet. Conceptaculum aut receptaculum loco citato descriptum plane accessorium est. Non rara fuscescit.

*1394. 247. S. SCABRISETA, L. v. S., in crusta aliarum Sphaeriarum sub cortice Castaneo rarior Bethlehem.

S. irregulariter circinnans, nudiuscula. Peritheciis globosis nigris et fuscis valde tuberculosis. Ostiolis longissimis flexuosis, undique scabris, pilis nempe obsitis minutis fuscis, subpellucidis. Minor est S. pulchellae cui affinis. Interdum sola ostiola ex epidermide fissa prorumpunt.

*1395. 248. S. RUFESCENS, L. v. S., frequens sub epidermide Rhois glabri Salem et Bethl.

S. circinnatim nidulans in ipsa corticis substantia, qua rufescente regulariter tecta. Ostiolis centralibus longissimis, teretibus, decumbentibus, flexuosis, divergentibus, per rimas epidermidis prorumpentibus, saepe albo-pruinosis, et quodammodo Cenangium conspersum referentibus. Peritheciis nigris orbiculatim in foveolis corticalibus absque ullo stromate, depresso-decumbentibus.

*1396. 249. S. EXPERS, L. v. S., frequens in ramulis teneris Rosae corymbosae Bethlehem, affinis S. ambienti, sed disci aut ullius stromatis expers.

S. immersa, epidermide tecta, peritheciis vix in substantiam corticis penetrantibus, eleganter orbiculatim circinnantibus suberectis, nigris, collo brevissimo junctis, disco nullo. Ostiolis brevissimis crassiusculis, aterrimis, subumbilicatis, prospicientibus ex rimis epidermidis.

*1397. 250. S. RIMICOLA, L. v. S., (olim S. *asplenifolia* mihi) passim in rimis tranversalibus ramorum juniorum Comptoniae asplenifoliae Bethlehem.

S. circinnata, suberecta, minutissima ; in rimis hiantibus epidermidis aut potius corticis, observantur pustulae immersae cortice interno rufescenti, et ab eo arcte tectae. Ostiolis aterrimis centralibus, teretibus, cylindricis, glabris, arcte stipatis, parum prominulis, pressione peritheciorum sed absque ullo disco invicem junctis. Peritheciis paucis ovato-compressis, albo-farctis.

*1398. 251. S. RHIZINA, L. v. S., in radice Rhododendri—affinis priori, Bethl.

S. circinnata, arcte tecta cortice interno, ostiolis teretibus pertusis subdivergentibus, orificio amplo, primum interdum papillato. Peritheciis densim circinnantibus, valde depressis, crebris, olivaceo-nigris, albo-farctis, minutis, nidulantibus in foveolis corticalibus absque ullo stromate.

*1399. 252. S. ACULEANS, L. v. S., passim in truncis ramisque Rhois typhinae Bethl. protuberantibus ostiolis, ramum tactu quasi aculeatum reddens.

S. subcircinnata, minor, pustulis undique in ramo sparsis, satis elevatis cum epidermide arcte cingente. Peritheciis nidulantibus in stromate fuscescente omnino corticali, atris, albo-farctis, subdecumbentibus aut erectis, in collum longiusculum coalitis. Collo fuscescente protruso, demum ostiolis spinulosis frequentibus obliterato. Ostiolis ipsis teretibus subacutis, primum saepe glaucopruinosis, aterrimis ceterum.

Trib. 13. CAESPITOSAE.

1400. 253. S. *cinnabarina*, F. 201, Syn. Car. 118, freq. et. Bethl.

*1401. 254. S. VERRUCOSA, L. v. S., frequens in Moro et Sassafras, Bethl.

S. caespitosa, in stromate applanato, incarnata, ac rubro-coccinea. Peritheciis minoribus globosis, basi autem quasi contractis, ubi stromate insident, crebris, vix collabescentibus, circumcirca verrucoso-tuberculosis; ostiolis minutis papillatis. Intus rubris. Differt a priori magnitudine et peritheciis verrucoso-punctatis, nec tam manifestim decolorantibus.

1402. 255. S. *coccinea*, F. 202, Syn. Car. 119 et. Bethl. cum variet.

1403. 256. S. *Ribis*, F. 203, Syn. Car. 121 (appendiculata) et. Pennsylv.

1404. 257. S. *populina*, F. 205, Syn. Car. 120, etiam Pennsylvania.

*1405. 258. S. *micheliana*, F. 206, Bethlehem in cort. quercino.

*1406. 259. S. *conglobata*, F. 207, in Corylo Bethl. var. b.

1407. 260. S. *cucurbitula*, F. 209, Syn. Car. 133, vulgaris Bethl.

*1408. 261. S. *punicea*, F. 210, in Viburno dentato Bethl.

1409. 262. S. *Berberidis*, F. 211, Syn. Car. 129, non in Pennsylv.

1410. 263. S. *varia*, F. 213, Syn. Car. 128, in prunis et. Bethl.

*1411. 264. S. *naucosa*, F. 212, rara obvia Bethl.

*1412. 265. S. *acervata*, F. 214, in ramis populinis ibid.

1413. 266. S. *cupularis*, F. 215, Syn. Car. 132, freq. et. Pennsylv.

*1414. 267. S. *pulicaris*, F. 217, ram. sambucinis Bethl.

*1415. 268. S. *inversa*, F. 208, in castaneorum et quercuum ramis praesertim igni destinatis, Bethl.

1416. 269. S. MORBOSA, L. v. S., Syn. Car. 134, F. 218. Multo frequentius occurrit Pennsylvania quam Carolina. Haec Sphaeria aeque paradoxa quam lethalis pestis, nobis in plerisque Prunis indigenis obvia. Nec autem in Pennsylvania, nec in Carolina unquam inventa, arbores indigenarum specierum destruens. Prunis Cerasis autem cultis, praesertim his, nobis nomine "Amarellae" morbum lethalem infert. Ante 40 annos haec varietas Cerasorum vulgata erat v. c. Bethlehem. Paucis annis post, fere omnes destructi sunt, combinato furore hujus fungi et Cynipis, operibus cujus semper insidet, et id adeo, ut Pomologi nostri ad hanc diem novos restituere non valeant. Interim Pruni variae, e. g. Hungaricae, Reine Claude, &c. nuper introductae et assidue cultae, eximie florebant nec unquam huic morbosae pesti succubuerunt. Nuperrime autem et in his omnibus Cynips, fungusque incepiunt saevire, et quidem magnitudine semper maxime aucta, sistentes tumores ad sesquipedalem longitudinem extensos—sed non tam dense onustos peritheciis quam in ramulis Cerasorum inveniuntur. Exoptandum remedium hujus morbi nondum inventum.

*1417. 270. S. TUMORUM, L. v. S., passim in tumoribus istis ramealibus (an ictu Cynipis ortis) quibus rami quercini vigentes, interdum totae arbores mire modo infestantur. Bethlehem.

S. caespitosa (passim simplex) tumoribus insidens, ex quorum substantia, sine manifesto stromate quasi prorumpunt. Peritheciis globoso-difformibus, papillatis, rugosissimis, intus albo-farctis.

*1418. 271. S. OCHROLEUCA, L. v. S., in variis arboribus frondosis—satis distincta a S. cinnabarina, Bethlehem et Salem.

S. caespitosa, stromate obliterato, sed nunquam omnino deficiente. Peritheciis ovatis et obovatis, junioribus subcylindricis, ochroleucis, glabris, minutis, creberrime aggregatis, polystichis, caespitulis subeffusis, confluentibus tamen semper subpulvinatim elevatis: demum passim collapsis sed non pezizoideis, minutim papillatis, intus concoloribus nec unquam decolorantibus.

*1419. 272. S. MOLLIUSCULA, L. v. S., in lignis cariosis emollitis nidulans, in stromate parum elevato, nigro-fusco, in faveolis ligni sito. Substantia peritheciorum primum molliuscula. Salem.

S. caespitosa, molliuscula, demum indurata. Stromate applanato ejusdem indolis, peritheciis majusculis insidentibus, oblongo-ovatis, eleganter fuscis, demum extus pulverulentis: ostiolis deciduis,

brevibus, nigro-nitentibus, peritheciis demum pertusis ore subnitenti-nigro (post dejectionem ostiolorum)—nunquam collapsis Caespituli vix bilineares. Stroma demum pulveraceum. Quodammodo abiens ad Periphaericas.

*1420. 273. S. Mezerei, L. v. S., ex rimis epidermidis D. Mezerei in hortis, Bethl.

S. caespitosa, plerumque flexuosim ex rimis epidermidis prorumpens, insidens stromati plus minusve effuso ex massa corticali nigro-tincta orto. Peritheciis aut omnino separatis (tum ex cylindrico-conicis, nigris, basi attenuatis, apice abientibus in ostiola acuta) aut in centro caespituli inter se confluentibus. Intus cavis.

*1421. 274. S. Celastri, L. v. S., in ramentis Celastri scandentis Bethlehem rarior.

S. caespitosa, erumpens in stromate Tuberculario ideo extus fuscescente, intus pallide lutescenti, subpulvinato, et huic circum circa insidens. Peritheciis dense sitis sed non accumulatis, globoso-ovatis, corrugato-rugosis; ostiolis obsoletis, ceterum brunneo-fuscis; magnitudine S. cinnabarinae: Faciliter excedit aeque ac stroma; ab epidermide stellatim fisso circumdantur caespituli regulares. Perithecia demum indurescunt sed non collapsa inventa sunt.

*1422. 275. S. Junipericola, L. v. S., minuta; frequens in cortice Juniperi virginianae Salem et Bethl.

S. caespitosa, erumpens, stromate obliterato. Peritheciis pro ratione majusculis paucis in quoque caespitulo, saepe confluentibus ac globoso-depressis, aterrimis, rugulosis. Ostiolis minutissimis deciduis, tum ore aperto, per quod conspicitur massa interior alba. Faciliter ex epidermide excutiuntur perithecia, faveolos linquentia.

*1423. 276. S. stipata, L. v. S., etiam in cortice juniperino, Bethlehem.

S. caespitosa, caespitulis variis, plurimis minutis, prorumpentibus ex epidermide stellatim fisso; aliis majoribus in rimis corticis sitis, stromate nigro subobliterato. Peritheciis ipsis etiam variis, quibusdam difforme-globosis majoribus, aliis minutis, omnibus nigris rugulosis. Ostiolis brevibus difformibus, saepe deficientibus; ceterum intus cavis, sacculo fuscescente praeditis, nec albofarctis. Arcte stipata sunt perithecia, nisi in minoribus caespitulis, ubi interdum simplicia occurrunt.

*1424. 277. S. dematiosa, L. v. S., frequens in ramulis Platani ac in Mori, affinis S. cinnabarinae sed multo minor, Bethlehem.

S. caespitosa, ex epidermide prorumpens, stromati basilari applanato. Peritheciis paucis globosis, glabriusculis, ex colore rubro in nigro-fuscum decolorantibus, indistincte ostiolatis, collapsis, undique pilis brevissimis subpellucidis dematiosis tectis. Faciliter excutiuntur et faveolos linquent. Caespitulis vix semilinearem diametrum superantibus.

*1425. 278. S. Sumachi, L. v. S., eximia et majuscula species ad sequentem tribum spectans, rarius sed tum magna copia occurrit in Rhoi glabro (vulgo "Sumach") Bethl.

S. caespitosa, peritheciis subconfluentibus, in stromate nigro, subobliterato. Caespitulis majusculis difformibus ex epidermide prorumpentibus. Junior peritheciis crusta quadam nigra connatis. In adulta fere peritheciis liberis manifestim ostiolatis, majusculis, difformibus et invicem varie compressis gaudet. Sacculus internus albus manifestus, includens vigente statu, massam nigram gelatinosam spermaticam, demum evacuatus. Caespituli flexuosi ad tres lineas extensi.

*1426. 278. S. pubens, L. v. S., in junioribus ramis Robiniae, Bethl.

S. nigra, peritheciis pubentibus, sed ceterum adeo accedit ad S. elongatam sequentis sectionis, ut vix specie distinguenda.

*1427. 279. S. Van Vleckii, L. v. S., passim inventa Salem cum epidermide fibroso Bignoniae radicantis concrescens. Modo crescendi, habitu et adspectu omnino abnormis, unde eam olim pro S. coronata sumpsi.

S. irregulariter caespitosa, in stromate atro, subpulveraceo, cortici interiori, aut ipso ligno subaffixo, difformis et faciliter decedente, stroma hoc, crassiusculum, primum omnino tectum epidermide fibroso-subsoluto, peritheciis jam tum evolutis, quibuscum assurgit et truncum infestatum longe lateque quasi variolosum reddit. Denique per fibros prospiciunt ostiola, perithecia et caespituli ipsi, corticemque dejiciunt. Peritheciis ipis cylindrico-globosis, nigris, rugosis, vix inter se confluentibus sed a fibris solutis saepe separatis. Ostiolis longis, rostellatis, intermixtis brevioribus, divergentibus, demum deciduis. Peritheciis juventute albofarctis, demum evacuatis.

*1428. 280. S. Hyperici, L. v. S., rarior Bethlehem in cortice fruticum Hyperici hortis culti, affinis priori quodammodo.

S. caespitosa; junior confluens, demum peritheciis liberis. Caespitulis semper forma utrinque acuminata, longitudinaliter confluentibus, seriatim ex epidermide prominentibus. Stromati nigrofusco

quasi concavo, insident perithecia nigra, primum connata crusta ex qua sola ostiola protruduntur, demum omnino libera, globosa aut ovata, rugosa, ostiolata sese ostendunt. Ostiolis conico-papillatis, brevibus. Peritheciis evacuatis, intus atris—deciduis saepe ex stromate. Tum stroma, concavum et forma quadam naviculari, foveolis deciduorum peritheciorum notatum, epidermide fisso circumdatum se ostendit. Similitudo quaedam adest juniori aetate cum Sphaeriis concrescentibus. Caespituli minores.

*1429. 281. S. ATROFUSCA, L. v. S., in ramis Staphyleae trifoliatae Bethlehem format minores caespites.

S. caespitulis lineam vix excedentibus, sed copiosim et tractu lineari prorumpens ex epidermide ab eo stellatim fisso cincta, caespitulis vix confluentibus Peritheciis insidentibus stromati palpabili, tamen faciliter ex materia corticali excusso, ceterum statu vegeto atrofuscis, conicis, subpellucidis, ostiolis simplicibus cum perithecio confluentibus; statu sicciori, collapsis non tamen pezizoideis, sed potius compressim aut omnino irregulariter collapsis, nigrescentibus. Peritheciis minutissimis.

*1430. 282. S. PARASITANS, L. v. S., rara species et valde memorabilis, occupat Tubercularium in consortio S. cinnabarinae in Robinia Bethl.

S. caespitosa, minuta, parasitans in Tubercularia quam interdum omnino occupat, sibi tamen vindicans stroma proprium nigrum, cui aetate maturo insident perithecia numerosa, se insuper aggregata, aterrima, subconico-difformia, tuberculosa, primum molliuscula, demum collapsa, manifestim ostiolata. Intus plerumque evacuata inveniuntur. Inter mixtam S. cinnabarinam ter minutie excellit.

Trib. 14. CONFLUENTES.

1431. 283. S. GYROSA, L. v. S., Syn. Car. 24, F. 221, specimina pulcherrima amicissimus Torrey ex Nova Anglia misit. Saepe cum variis Tuberculariis concrescit et summn jure ad hunc tribum a Cl. Friesio refertur.

1432. 284. S. QUERCUUM, L. v. S., Syn. Car. 125, F. 223; et. Pennsylv.

1433. 285. S. CASTANEAE, L. v. S., Syn. Car. 124, F. 224, et. Pennsylv.

1434. 286. S. CALYCANTHI, L. v. S., Syn. Car. 126, F. 225, et. Pennsylv.

1435. 287. S. GLEDITSIAE, L. v. S., Syn. Car. 31, F. 226, et Pennsylv.

1436. 288. S. INSIDENS, L. v. S., Syn. Car. 122, F. 228, et. Pennsylv.

*1437. 289. S. *clongata*, F. 230, in Robinia Bethl. frequens.

1438. 290. S. *fissa*, F. 234, Syn. Car. in Rosis etiam, Pennsylv.

*1439. 291. S. *mutila*, F. 235, passim in populinis Bethl.

1440. 292. S. *mucosa*, F. 238, Syn. Car. 67, et. freq. Pennsylv.

*1441. 293. S. *melogramma*, F. 222, rarior in Fago Pocono.

*1442. 294. S. *fuliginosa*, F. 231, in ramis salicinis Bethl.

*1443. 295. S. SUBCONNATA, L. v. S., satis frequens, prorumpens ex epidermide caulium Gossypii, Salem, Carolina.

S. caespitosim confluens, elliptice prorumpens ex tenero epidermide, vix linea longa, aterrima, Peritheciis difformibus paucis, pro ratione majusculis, apice applanatis aut irregulariter subcollapsis, papillato-ostiolatis. Intus albofarctis, demum deciduis; tunc in foveolis observatur struma albescens, subcupulatum cui insident.

*1444. 296. S. HIBISCI, L. v. S., rara obvia in truncis emortuis Hibisci rosei, Salem.

S. caespitulis elongatis confluentibus, saepe varie flexuosis ex epidermide prorumpens, epidermide substellatim fisso, circum circa erecto, sed non caespitulum denudante. Superficie caespituli applanata, in qua ad dimidiam partem prominent perithecia, nigra, pulvere parco fusco atro adspersa, papillata, ovata intus albofarcta. Fibros corticales quibus adhaerent caespituli cum ligno nigrescunt.

*1442. 297. S. AMBIGUA, L. v. S., in sarmentis Rhois radicantis Carolina et Pennsylv.

S. prorumpens caespitulis subrotundis nigris satis elevatis Peritheciis non ostiolatis, denique pertusis subirregularibus oblongis, imo subflexuosis et glubosis, paucis tantum confluentibus. Extus quanquam non glabris, quasi nitentibus intus albofarctis. Sphaeriae fuliginosae non dissimilis.

*1443. 298. S. MELIAE, L. v. S., vulgatissima in ramulis Meliae azedarach Carolina.

S. satis polymorpha. Junior ex epidermide prorumpens ab ea cincta, cospisculum sistit sclerotoideum subrotundum, griseo-fuscum, peritheciis in superficie vix prominentibus, intus jam indistinctis nidulantibus in materia stromatica pulveracea. Provectiori aetate caespitulis elongatim et seriatim

confluentibus, perithecia fere omnino liberantur, pluribus tamen in unum connatis, apice applanato, ceterum rugosa, difformia vix albofarcta. Ostiolis indistinctis hysteriimorphis.

*1444. 299. S. Persimmons, L. v. S., passim in cortice Diospyri ving. (vulgo Persimon) non dissimilis S. quercuum, Salem.

S. caespitulis gregarie confluentibus, varie flexuosis planiusculis, nigris, ex epidermide elevata prorumpentibus. Peritheciis convexis, semiprominulis, papillatis, intus albofarctis, demum evacuatis. Differt a S. quercuum peritheciis valde prominulis et ostiolo manifestiori conico-papillato, etiam apice peritheciorum subtruncato.

*1445. 300. S. Crataegi, L. v. S., in variis speciebus Crataegi, Bethl.

S. caespitulis plerumque ellipticis prorumpentibus nigris aut fuscescentibus, laxe nempe ad dimidiam parte involutis tomento furfuraceo fusco. Peritheciis majusculis, paucis, difformibus, semiliberis, demum pertusis (an primum papillatis?) intus albofarctis, demum evacuatis. Horizontaliter secto caespitulo, perithecia subcircinnatim disposita, in ipsa massa corticali nidulantia conspiciuntur.

*1446. 301. S. Gallae, L. v. S., species distinctissima freq. Bethl. in Gallis vetustis Querc.

S. caespitulis sparsis, nigerrimis valde elevatis, superficialiter innatis. Peritheciis primum omnino confluentibus, ambitu quasi lobato. Demum semiliberis assurgentibus, difformibus regularioribus immixtis, rugosis, majusculis, manifestim papillatis, intus albofarctis.

*1447. 302. S. propullans, L. v. S., frequens in corruptissimis surculis Celastri, Bethl.

S. atra; caespitulo in libro corticali affixo, propullans per epidermidem, arcte ab ea cincto, satis elevato, forma subrotunda, basi contracta stromate parco insidente, subturbinato. Peritheciis majusculis atrofarctis, prominulis in superficie subdepressa, coronatis ostiolis papillaribus centralibus. Caespitulus superne quasi punctato-rugosis. Ceterum in quoque ramulo multi aggregati sunt caespituli.

Trib. 15. Seriatae.

*1448. 303. S. *filicina*, F. 242, in Pteride, Bethl.

*1449. 304. S. *junci*, F. 243, vulgatissima, Salem ac Pennsylv.

1450. 305. S. *arundinacea*, F. 245, Syn. Car. 79, *striaeformis*, et vulgaris in culmis Miegiae, Salem.

1451. 306. S. Zeae, L. v. S., Syn. Car. 79 γ, rara sed bene distincta in caulibus Zeae, Salem et Bethl.

S. omnino tecta, epidermide fusco tincta (ostiolis solis prominulis) satis elevata. Seriatim disposita, brevis, utrinque acuminata, subconfluens. Peritheciis binis vel ternis tantum in caespitulo, subdistantibus, primum albofarctis, demum evacuatis. Ostiolis latis, umbilicatis, saepe unico.

*1452. 307. S. *linearis*, F. 247, in Solidaginum caulibus, Bethl.

1453. 308. S. *Anethi*, F. 248, Syn. Car. 74, Carolina ac Pennsylv.

1454. 309. S. *culmicola*, F. 249, in culmo Andropogi, Bethl.

1455. 310. S. *longissima*, F. 251, Syn. Car. 75, et. Pennsylv.

*1456. 311. S. *melaena*, F. 252, vulgaris in caulibus Pennsylv.

1457. 312. S. *picea*, F. 253, Syn. Car. 78, ad caules firmiores.

*1458. 313. S. *chloromela*, F. 255, in caulibus Pastinacae et Angelicae, Bethl.

*1459. 314. S. *rimosa*, F. 241, A. S. in foliis et culmis Zizaniae Kaign's point, Philad.

*1460. 315. S. *Porri*, F. 257, Pers. β *exuberans*. In caulibus Alliorum. Peritheciis quidem albofarctis, sed an hujus sectionis? num semper aut simplici aut tantum duobus peritheciis majusculis mihi obvia. Primo adspectu affinis S. Zeae aut striaeformi.

1461. 316. S. *nebulosa*, F. 250, Syn. Car. 76, et in Pennsylvania vulgatissima in variis caulibus. Sequentes 5 species, S. nebulosae quidem affines sunt—tamen vix ad eam pertinent.

*1462. 317. S. cimicifugae, L. v. S., passim occurrens in caulibus Cimicifugae, Bethl.

S. sub epidermide, tecta; maculas sistens griseas, omnino similes prioris, sed crassiores quanquam ambitu indeterminato—ostiolis denique punctiformibus nitidis prorumpentibus. Peritheciis subjacentibus nidulantibus in ipsa substantia caulis, papillatis, globose-depressis, inter se distantibus sed seriatim dispositis; singulis similibus peritheciis S. herbarum; praesertim quando persistunt post destructam maculam. Tum subrugosa collapsa exhibentur.

*1463. 318. S. Euphorbicola, L. v. S., in caulibus Euphorb. marginatae hortis cultae, Bethlehem.

S. tecta, macula latissima effiguratim in caulibus effusa, omnino priorum. Peritheciis, pro ratione majusculis subjacentibus, atris, globosis, rugosis, creberrimis, demum cum macula cinerascente assurgentibus, ore pertuso, et demum ut in priori, omnino denudatis. Maculae plerumque majores quam in S. nebulosa.

*1464. 319. S. Iribicola, L. v. S., rarior in foliis putrescentibus Iridis virginicae, Bethl.
S. tecta, maculis griseo-nigris, vix determinatis, minoribus. Ostiolis solis globosis aut saltem obtusis prorumpentibus. Peritheciis sub macula, creberrimis, irregulariter dispositis nullimodo seriatis, intus albofarctis. Macula longitudine tres lineas vix excedit.

*1465. 320. S. fumosa, L. v. S , in caulibus Chenopodiorum maximorum freq. Bethl.
S. tecta; maculis fumoso-nigris determinatis oblongis, sed saepe longe lateque confluentibus. Sub lente augentiori e filis dothidineis, crusta cinerea intermixta compositae videntur maculae. Ostiolis creberrimis, seriatis, nigris, subacutis, prorumpentibus. Peritheciis minutissimis, vix cultello secandis, albofarctis. Ascos non vidi, et Dothideis valde affinis est. Ob habitum tamen huc collocanda.

*1466. 321. S. Peponis, L. v. S., vulgaris in fructubus Peponis, Bethl. et jam Salem.
S. tecta, macula cinereo-grisea, longe lateque indeterminatim effusa, subcrustacea, et faciliter detergibilis. Tum apparent perithecia, simplicia, sparsa, mollia, glabra, globosa, demum collapsa, papillata, ostiulis solis per maculam prospicientibus post maculam destructam, crustae adhaerentia. Primo adspectu ad priores pertinet, sed suspicor eam esse Spaeriam simplicem. Latissimis (palmaribus) plagis Pepones punctat.

*1467. 322. S. umbellatarum, L. v. S., rarior occurrit in caulibus Umbellatarum, Bethl.
S. tecta, maculis longe lateque subeffiguratim effusis, referens mappam gengraphicam, crusta nigrescenti absque ullo nitore. Peritheciis subtus distanter sparsis, basi ligno subimmersis, depresso-globosis, collo ad superficiem penetrante, ubi tum ostiola apparent crassa cylindrica, brevia, rugosa, subdifformia. Affinis Concrescentibus immersis.

*1468. 323. S. Typhae, L. v. S., vulgatissima in foliis Typhae latifoliae, Bethl.
S. minutissima, sed caespitulis aut potius maculis gregatim confluentibus ac saepe totum fere folium occupantibus. Macula quoque brevi, oblonga-subquadrata, nigro-fumosa: seriatim inter nervos dispositae sunt. Peritheciis multis etiam lineatim seriatis, minutissimis, punctiformibus, albofarctis, demum orbatis, astomis.

*1469. 324. S. Hibiscicola, L. v. S., in tenerioribus ramis H. palustris et militaris Hortorum, Bethl.
S. tecta, macula bullosim elevata, minori, nigrocinerea, elongata in ambitu quasi fimbriata; e fibris Dothidineis, crassis parallelis non radiantibus enim constare videtur macula. Peritheciis crebris cum crusta maculari elevatis, nigro-cinereo-farctis. Ostiolis brevibus conicis aut globosis, rugosis. Crusta maculae crassior quam in ceteris et quasi grumosa. In iisdem caulibus saepe etiam inveni *Dothideam delicatulam* nostram.

*1470. 325. S. Silphii, L. v. S., in ditissimi caulibus *Silphii connati* in Horto Nazareth.
S. primum tecta et tum cinerascens, demum denudata nitente nigrescens, maculas sistens lineares aut ellipticas utrinque acuminatas. Peritheciis creberrimis, albofarctis, ostiolis globosis deciduis: tum perithecia minuta referunt pezizulas. Affinis et S. polygrammae interna structura.

*1471. 326. S. Aristidae, L. v. S., rara in foliis Aristidae dichotomae, Salem.
S. effusa longitudinaliter; crusta aterrima expers tamen nitoris, epidermide non tecta: in sulcis nervorum, hypophylla et marginalis, forma lineari seriatim disposita, superficie rugosa. Peritheciis immersis, crebris, albofarctis, parum prominulis, pro ratione majusculis, vix ostiolatis.

*1472. 327. S. nervisequia, L. v. S., distinctissime in aversa pagina Andropog. scopariae Naz.
S. minutissima, atra, inter nervos disposita, oculis nudis lineolas minimas offert. Lente aucta, videntur maculae superficiales lineares, parallelae, utrinque truncatae, in quarum superficie conspiciuntur perithecia crebra, manifestim papillata, applanata, collapsa, albofarcta. Maculae saepe confluunt. Sphaeria *Andropogi*, in altera pagina saepe occurrit.

*1473. 328. S. fuscata, L. v. S., affinis S. lineari—in dejectis stipitibus horti Nazareth.
S. in maculis fuscis subnitidis, lineatim expansis proveniens, uniseriata. Peritheciis primum subtectis, demum liberis patellaeformibus, i. e. applanato-impressis, subrotundis, sparsis, (interdum extra maculam) Centro ex ostiolo papillaeformi nigro-punctato.

Trib. 16. Confertae.

1474. 329. S. epiphylla, L. v. S., Syn. Car. 130, F. 258, non in Pennsylv.

1475. 330. S. scirporum, L. v. S., Syn. Car. 71, F. 260, ex Georgia—videtur Carici non Scirpo increscere.

1476. 331. S. *graminis*, F. 261, Syn. Car. 70, freq. Pennsylv. var. α *Elymorum*, β *Poarum* et elegans varietas *cinerascens* in Muhlenbergia erecta.

*1477. 332. S. *conferta*, F. 264, olim mihi S. *acervulata*, frequens in foliis Juglandum Bethl.

1478. 333. S. ULMEA, L. v. S., Syn. Car. 288, Xyloma, F. 267, frequens et. Pennsylv. in fol. Ulmi fulvae.

1479. 334. S. YUCCAE, L. v. S., Syn. Car. 88, F. 270, Carolina.

*1480. 335. S. *bifrons*, F. 272, in foliis quercinis Bethl.

*1481. 336. S. *allicina*, F. 269, rarior in foliis Allii schoenoprasi Nazereth. Passim occurrit omnino simplex sine macula.

*1482. 337. S. *Caricis*, F. 262, Bethlehem inventa in Caricis crinitae foliis.

*1483. 338. S. PUNCTUM, L. v. S., in siccis foliis Panici nitidi, &c. Bethl.

S. minutissima, sublinearis, sistens puncta fusco-nigra subcinerascentia nudo oculo. Peritheciis immersis sed tam prominulis in superficie ut rugulosa fit. Ostiolis vix perceptibilibus; intus omnino similis S. graminis, sed quater terve minor.

*1484. 339. S. ANDROPOGICOLA, L. v. S., cum sequente frequens in foliis Andropogonum semper hypophylla, Bethlehem.

S. tecta, subinaequabilis, confluens plus minus effiguratim, minor, atronitens. Peritheciis non prominulis sed passim epidermidem folii nigro-tinctam paululum elevantibus, stromati fuliginoso pulveraceo immersis, primum albofarctis, demum evacuatis, astomis.

*1485. 340. S. ANDROPOGI, L. v. S., in eadem pagina foliorum cum priori Bethlehem sed habitu et indole aliena.

S. non tecta, sed superficialiter illita, superficie externa applanata inaequaliter corrugata, nigerrima absque ullo nitore, varie in ambitu lobata, confluens. Peritheciis astomis minutissimis et subindistinctis. An igitur Dothidea?

*1486. 341. S. LUTEO-MACULATA, L. v. S., semper insidet maculis lutescentibus in foliis languescentibus, maximorum Andropogonum Carolina apprime in pagina superiori.

S. tecta, oblonga, sita in maculis lutescentibus confluentibus, elevata cum parenchymate folii, atra, superficie inaequabili. Peritheciis seriatim immersis in stromate fuliginoso, parum prominulis, demum evacuatis, ostiolis latentibus. Differt a priori magnitudine 3—4 lineari, macula lutescente, nec pluribus in eadem macula confluentibus.

*1487. 342. S. CANALICULATA, L. v. S., ex eadem grege, sed optime distincta, Bethl. in foliis involucrorum Cyperi, pagina aversa inventa.

S. tecta, atra, constans e seriebus peritheciorum sitis inter strias folii, ita in maculam piceam paralleliter confluentibus, ut macula eleganter canaliculata evadit; major. Ostiolis crebris punctiformibus. In margine occurrunt perithecia subsolitaria subrotunda, applanata. Interdum etiam maculae piceae medio infertiles sunt—et, quod memorabile, saepe etiam macula ¼ uncialis, interrupta est, ita ut immutata substantia folii in conspectum venit.

*1488. 343. S. LESPEDEZAE, L. v. S., Syn. Car. 72, perperam ad S. Trifolii relata, quae omnino alia nondum mihi in America obvia. Haec nostra in variis Lespedezis praesertim monticolis et in Pennsylvania.

S. semper macula latiori lutescenti in folio effusa insidet valde varians magnitudine, rarius adaequans S. Trifolii. Peritheciis pluribus quidem junctis in plaga atra consimili priorum maculis—sed non rariter occurrit perithecium majusculum solitarium in minori plaga atronitenti, demum evacuatum, praeditum ostiolo pertuso non elevato. Et in speciminibus vere confertis caespitulus atronitens non tuberculoso-rugulosus evadit, peritheciis inclusis, sed tantum superficie inaequabili sed ostendit. In simplicibus margo sterilis semper adest; centro quasi hemisphaerice elevato.

*1489. 344. S. FLABELLA, L. v. S., pulcherrima species hypophylla in frondibus emortuis Pteris aquilinae, Bethl.

S. tecta, majuscula, atra ac atro-cinerascens. Centro quasi innata nervo pinnarum frondis, et ad semi-uncialem latitudinem effusa, sese in pinnas utrinque lobato-flabellatim extendit, superficie inaequabili bullosa. Peritheciis albofarctis, demum evacuatis in stromate cinereo immersis, ostiolis plerumque latitantibus: passim papillatim prominulis.

*1490. 345. S. PANICI, L. v. S., in semivivis et emarcidis foliorum Panicorum, Bethl.

S. maculis crebris non late effusis, parvulis lutescenti-purpureis (in marcidis foliis evanidis) insident caespituli atri minuti obscure nigri, primum tecti, in foliis marcidis atronitentes, subrotundi, aut irregulariter lineares, amphigeni, sed solummodo in pagina superiori fructificantes. Peritheciis paucis immersis, inaequaliter elevatis, obliterato-ostiolatis, interdum collapsis. Stromate vix ullo.

*1491. 346. S. Agrostidis, L. v. S., an mera varietas S. graminis? in A. filiforme Bethl. minor.
S. insidens maculis fuscobadiis, evanidis in foliis emortuis, lato effusis. Caespitulo applanato utrinque acuminato, minuto, tecto, confluente, demum elevato, striato et rugulosa ex peritheciis subjacentibus in stromate parco subfusco. Ostiolis indistinctis.

*1492. 347. S. Iridis, L. v. S., affinis S. *epiphyllae*. Frequens in foliis *Iridis*, Kaign's Point, Phliad.
S. caespitulis minutis oblongis aut difformibus passim confluentibus, ex epidermide prorumpentibus ab ea cinctis, insidentibus stromati quadam ex massa folii orto. In caespitulo quocunque nigro cinerascenti, pluria perithecia majuscula oblongo-difformia, ultra medium immersa, atronitentia, primum albo-farcta demum evacuata, astoma conspiciuntur.

Trib. 17. Byssisedae.

1493. 348. S. *aurantia*, F. 276, Syn. Car. 170, etiam in Pennsylv. vulgaris in lignis, praesertim autem in fungis pileatis membranaceis, Polyporis, Thelephoris, &c.

*1494. 349. S. Boleticola, L. v. S., rarior in Polyporo citrino corruptissimo inventa Bethl. affinis priori, sed colore dilutiori, indole Subiculi, et forma Peritheciorum distincta. An var. β fulgens Fries. huc pertinet. Sed in nostra perithecia minime confluunt, potius sparsiora quam in priori.
S. subiculo effuso, interrupto, laxioris contextus quam in priori plagis irregularibus, ex ochraceo-aurantio, margine albescenti. Peritheciis subiculo tantum semi-immersis, conico-ovatis, plus minus sparsis, primum concoloribus, demum rubro-aurantiis molliusculis, papillatis, faciliter ex subiculo excussis, et foveolos linquentibus. Gelatina seminalis interna albissima, demum propulsa, plerumque in ostiolo remanet, ut villus candidus.

1495. 350. S. *rosella*, F. 277, Syn. Car. 171, nondum in Pennsylv.

*1496. 351. S. *thelena*, F. 279, Specim. nostra fere terrestria, ad radices truncorum, ex New York misit Torrey.

*1497. 352. S. *aquila*, F. 280, Bethlehem rara interdum subconnata.

1498. 353. S. Corticium, L. v. S., Syn. Car. 173, frequens et Pennsylv. in Castaneis. Species distincta, ob subiculum fere Thelephoroideum. Peritheciis maximis.

*1499. 354. S. purpureo-fusca, L. v. S., ramis querneis increscit passim Bethlehem, tomento crasso purpureo-fusco latissime expanso, peritheciis primum omnino tectis.
S. subiculo tomentoso racodioideo purpureo-fusco, longe lateque effuso, primum perithecia omnino tegente. Subinde obliteratur, peritheciis caespitosis, aut longitudinaliter seriatis quibus obsitum. Peritheciis ceterum maximis, (imo Sphaeriae byssisedae longe majoribus) sparsis ac aggregatis, globosis, undique nisi circa ostiola tomento tenero fusco-purpureo involutis. Ostiolis atris, conicis, nudis, brevibus, interdum quasi lateralibus.

1500. 355. S. *byssiseda*, F. 281, Syn. Car. 168, vulgatissima saepe agmine ulnari in ramis praesertim Salicinis et Bethl.

1501. 356. S. truncatula, L. v. S., Syn. Car. 174, F. 282, et. in Pennsylv.

1502. 357. S. diffusa, L. v. S., rarius occurrit, ad longitudinem ulnarem in cavitate Juglandis cinerea adhuc stantis effusa, Bethl.
S. tomento subiculari longe lateque effuso fusco-brunneo passim compactiori et ibi infertili, non autem crasso. Ex hoc erumpunt perithecia sparsa aut dense aggregata, mediocra, atra, valde rugosa, plerumque globosa aut aggregatione compressa primum convexa, papillatim ostiolata juventute, demum semi-collapsa et pertusa.

*1503. 358. S. imposita, L. v. S., in dejectis ramulis Bethl. occurrit infrequenter.
S. subiculo parco longitudinaliter effuso, fuscescenti, imposita sunt perithecia magna, vix immersa, ex atro-fusca, rugulosa, globosa, ostiolo subconico-papillato, sparsim seriata, interdum autem subaggregata, imo subconfluentia. A priori differt indole, magnitudine peritheciorum, et subiculo parco.

1504. 359. S. subiculata, L. v. S., Syn. Car. 175, F. 284, vulgata etiam in Pennsylvania. Subiculo saepe obliterato.

*1505. 360. S. cuticularis, L. v. S., passim in cortice denudato Bethl. affinis priori, sed tamen sequentibus notis distincta.
S. simplex, subiculo insidens cuticulari splendente-candido vix manifestim floccoso, longitudinaliter effuso angusto, non pulverulento. Peritheciis subsparsis hemisphaericis atro-nitidis, papillatis. Magnitudine prioris.

1506. 361. S. *cinerea*, F. 283, Syn. Car. 169, solummodo Salem.

1507. 362. S. NIDULANS, L. v. S., Syn. Car. 185, F. 285, pulcherrimam speciem nunquam invenire contigit in Pennsylv.

1508. 363. S. CONFERTULA, L. v. S., Syn. Car. 187, F. 286, (conferta) rariter etiam in Pennsylv.

1509. 364. S. *tristis*, F. 287, Syn. Car. 212, vulgaris et. Bethl.

*1510. 365. S. *flavescens*, F. 288, β var. *epimyces* alba, rarius in Hymenio Polypori resupinati cujusdam Bethl. Differt a Friesii colore albo tomenti et a S. panno peritheciis albis, non nigris.

*1511. 366. S. *rhodomela*, F. 291, rara in Carolina et Pennsylv.

*1512. 367. S. COLLINSII, L. v. S., valde abnormis—in aversa pagina folii ignoti (an exotici) mihi ab doctissimo Zacchaeo Collins communicata est.

S. tomento crasso densissime intertexto efficiente plagas latas effusas inter nervos paginae aversae folii ignoti, e fusco-nigras, floccis suberectis. Subiculo huic floccoso, creberrime insident perithecia globosa, nigra (S. nidulanti proxima) astoma, vel saltem indistincta ostiolata, sed demum globulo spermatico irregulari, caseos continens, coronata.

Trib. 18. VILLOSAE.

*1513. 368. S. PENICILLATA, L. v. S., in ramulis teneris dejectis Ribis aureae Bethl. cultae—propius accedens ad S. chioneam, sed abnormiter formata.

S. sparsa, agmine tamen magno, et quasi in flexuosis seriebus sita, superficialiter sed firmiter affixa basi in epidermide, rariter fasciculata et subconfluens. Peritheciis obovato-globosis, applanatis undique villosissimis; villis versus basin brevioribus fusco-viridibus, versus apicem a medio densis, longissimis, penicillatim divergentibus, candidissimis; ostiola minuta obtusa nigra plerumque omnino investientibus. Intus peritheciis massa spermatica alba-fuliginea-farctis parietibus nigris tenuibus. Interdum perithecia difformia evaduut et pezizulam referunt albo-villosam.

1514. 369. S. *ovina*, F. 293, Syn. Car. 178, freq. et. in Pennsylv.

*1515. 370. S. *mucida*, F. 294, passim Salem et. Bethl. var. β *rostellata*, ostiolis longiusculis, peritheciis oblongis, agmine denso occurrit in Rhoi typhina.

*1516. 371. S. *mutabilis*, F. 295, rara Bethl.

*1517. 372. S. *araneosa*, F. 296, Salem. Villo fugacissimo—et tum refert S. subiculatam nostram.

1518. 373. S. *strigosa*, F. 298, Syn. Car. 180 et. Pennsylv. semper autem in Kalmia aut Rhodendr.

*1519. 374. S. *tephrotricha*, F. 299, Bethl. rara.

1520. 375. S. *biformis*, F. 300, Syn. Car. 147, etiam Bethl.

1521. 376. S. *Racodium*, F. 301, Syn. Car. 183, vulgata et. Pennsylv.

1522. 377. S. *hirsuta*, F. 302, Syn. Car. 182, et. Pensylv.

1523. 378. S. *crinita*, F. 303, Syn. Car. 179, distincta filis basilaribus ligno irrepentibus. Et. Pennsylv.

1524. 379. S. *pilosa*, F. 304, Syn. Car. 181, passim et. Bethl.

1525. 380. S. *hispida*, F. 305, Syn. Car. 184, etiam Pennsylv.

*1526. 381. S. *calva*, F. 306, bene distincta ramulis, Bethl.

*1527. 382. S. *cincinnata*, F. 307, eximia et distinctissima species in foliis virentibus Oxycocc. macrocarpae Pocono.

*1528. 383. S. *vermicularia*, F. 308, rara sed bene distincta in frustulo pinco Camden. Vera Sphaeria nec ad genus Linkii Exosporium pertinens.

1529. 384. S. *exilis*, F. 309, Syn. Car. 213, etiam Pennsylv.

*1530. 385. S. CLADOSPORIOSA, L. v. S., abnormis et in quibusdam speciminibus monstrosa inter quos alia, quae satis referunt S. *depilatam*. In Polyporo vetusto rariter, sed tum magna copia. Bethl.

S. abnormis, maxima et minuta, sparsa, interdum confluens, undique pilis virescentibus, exacte referentibus Cladosporium fungorum, brevibus, densissimis, tecta. Passim observantur perithecia minuta ovato-globosa subostiolata, quasi depilata, i. e. pilis tantum basilaribus et raris. Ceteris et plerisque autem maximis, globoso difformibus, S. *bombardam* revocantibus, invicem compressis immo etiam bullosis, ostiolo indistincto obtusissimo. Saepe basi latiori quasi insident et inde formam induunt subconicam. Intus cavitate maxima, parietibus crassis nigris. Extus pella cladosporiosa arcte indutae sunt hae majores sphaerulae. Juniores ostiola distinctiora habent, sed tamen tecta pelle. An monstrositas S. depilatae?

*1531. 386. S. INTONSA, L. v. S., passim in paleis cortice orbatis, ex truncis Robiniae pseudacaciae factis, Bethl.

S. gregaria, atra, e ligno quasi erumpens, subhemisphaerica, aut cylindraceo-elevata, apice obtusa, in ostiolum indistinctum abiens, rarius diffracta. Intus inanis. Statura minuta. Extus pilis brevibus rigidis, ut barbae mox tondendae, dense obsita, simplicibus divergentibus nec ullo modo intricatis.

*1532. 387. S. INVOLUTA, L. v. S., affinis S. chionaeae et etiam similitudinem habet cum Myriococco. In truncis vetustis, Bethl.

S. densissime aggregata, ligno laxiter affixa. Peritheciis laevibus, globosis, subpapillatis, interdum subcorrugatis, nigrofuscis, nitentibus, omnino obvolutis villo albo densissimo aetate detergibili, apice tantum paulisper denudato. Inanis.

*1533. 388. S. SETOSA, L. v. S., satis affinis S. *hirsutae*—passim in mucidis Sal. et Bethl.

S. peritheciis sparsis, majusculis, ovato-conicis, fuscis, confluentibus cum ostiolo indistincto, valde tuberculosis, obsitis pilis fuscescentibus setosis, rigidis, longiusculis, ex quoque tuberculo protrusis, demum deciduis. Vix immersa ligno.

*1534. 389. S. EMERGENS, L. v. S., affinis S. *Racodio*, in cariosis lignis. Differt praesertim summa laxitate subiculi tomentosi, forma peritheciorum, et villo laxo, quo tecta sunt. Bethl.

S. sparsim emergens ex subiculo, tomentum laxum referente ex floccis, primum erectis aut ligno laxissime irrepentibus, demum compactis, contextum. Peritheciis ovato-conicis, rugulosis, nigris aut fuscis, confluentibus cum ostiolo, undique tectis pilis crebris longiusculis divergentibus fuscescentibus, laxis non rigidis. Aetate provectiori, saepe invenitur diffractis peritheciis et excussis, linquentibus foveolas in subiculo.

*1535. 390. S. RATTUS, L. v. S., passim Bethl. in ligno denudato et in ramis.

S. gregaria, et passim etiam sparsa, peritheciis majusculis fragillimis tenerrimis, glabris, e globoso-conicis. Ostiolo obtusiusculo nigro, demum nudo, primum cum ipso perithecio pellicula nigra pilosissima tecto, pilis e fusco cinerascentibus longiusculis divergentibus; quasi pellem Ratti referente. Statu juvenili, perithecia immersa sunt, pilis tantum prorumpentibus, demum prorumpunt et sublibera deveniunt. E longinquo aterrimo colore gaudent, sub lente fusco cinerascunt.

*1536. 391. S. CAESPITULANS, L. v. S., an hujus Tribus? pilis enim brevissimis, forsan tuberculis minutis tecta. Rara in ramis Rubi Idaei, Bethl.

S. caespitulosim concrescens, aut tractu lineari-elongato fasciculata. Peritheciis minimis, ovato-difformibus, acutim in ostiola abientibus, aterrimis, rugosis, et undique pilis minutis brevibus, crassis (an tuberculis potius) obsitis. Substantia molli, saepe irregulariter collapsa. Individua non caespitulosa occurrunt. Minima est hujus Tribus.

*1537. 392. S. VIRIDIATRA, L. v. S., semper parasitica in variis Sphaeriis Connatis, Bethl. elegans ac distincta species.

S. sparsim aut caespitulosim proveniens in aliis Sphaeriis exsoletis. Peritheciis minutis globosis aut ovatis, carbonaceis, rugosis, obtusis, vix ostiolatis, basin versus nudis, nigris, in apice autem dense tectis villo luteo-virescenti brevi. Aetate saepe diffracta et evacuata, sacculo manifesto instructa sese praebent perithecia.

*1538. 393. S. SQUAMULATA, L. v. S., abnormis sed distinctissima species, satis frequens, Bethl. insuper crustam nigram quae saepe in lignis cortice orbatis oritur; plus minus sparsa aut connata.

S. sparsa, aut subconnatim concrescens. Peritheciis carbonaceis ovato-globosis aut difformibus, majusculis, crustae nigrae interdum longe lateque effusae aequabili increscentibus, interdum abbreviatae et valde rugulosae; abientibus in ostiola distincta crassiuscula, demum pertusa; extus ceterum rugulosis et dense tectis tegumento quodam ambiente inter villositatem et substantiam squamuloso-pulveraceam colore subsplendente luteo fusco aut badio, demum nigrescente. Ostiolis nudis nigris. Peritheciis primum farctis massa spermatica alba, demum evacuatis.

*1539. 394. S. MONSTROSA, L. v. S., in lignis castaneis Bethl. forma, et magnitudine plane monstrosa, quasi pustulas referens Sphaeriarum circumscriptarum.

S. gregaria, insidens crustae nigrae lignatili, majuscula et interdum maxima et deformata. Basi tumida abiens in ostiolum crassum pyramidatum sulcatum. Intus primum nigrofarcta, demum evacuata; ceterum substantia carbonacea. Extus pilis undique crebris fuscis subrigidis, densissimis una cum ostiolo, obtecta. Similitudinem quandam habet cum certis varietatibus S. spinosae; passim etiam occurrit absque pilis et denudata. Primo juventute se ostendit solummodo ut aggregatio pilorum Cladosporii.

Trib. 19. Denudatae.

1540. 395. S. *Peziza*, F. 311, Syn. Car. 167, freq. et in Pennsylv.

1541. 396. S. *sanguinea*, F. 313, Syn. Car. 197, et. Bethl. in Sphaeriis.

*1542. 397. S. fibriseda, L. v. S., affinis priori sed minor, frequens in fibris corticalibus subsolutis Castaneae, Bethl.

S. minutissima, sparsa, sanguinea, pellucida, e globoso-ovata, papillata, densis gregibus adhaerens fibris corticalibus ramorum Castaneorum, epidermide orbatis, glaberrima, demum collapsa. Vix nudo oculo singula perithecia discernuntur.

1543. 398. S. *epispharia*, F. 315, Syn. Car. 140, vulgaris Pennsylv.

*1544. 399. S. *ordinata*, F. 316, aetate nigra, Salem et Bethl.

1545. 400. S. *seriata*, F. 317, Syn. Car. 162, etiam Bethl.

1546. 401. S. *pomiformis*, F. 318, Syn. Car. 161, etiam Bethl. vulg.

1547. 402. S. *mammaeformis*, F. 319, Syn. Car. 160, et. Bethl.

*1548. 403. S. *stercorea*, F. 320, Salem et Bethl. in stercore vulg.

*1549. 404. S. *pleurostoma*, F. 321, Bethl. elegantula species.

*1550. 405. S. *obducens*, F. 322, Bethl. rara sed distinctissima.

*1551. 406. S. *ventricosa*, F. 324, subinde collapsa, majuscula rara occurrit, Bethl.

1552. 407. S. *spermoides*, F. 325, Syn. Car. 187, vulgaris, Bethl.

1553. 408. S. *moriformis*, F. 327, Syn. Car. 211, rara Pennsylv.

1554. 409. S. *pulvis pyrius*, F. 329, Syn. Car. 210, vulgaris etiam in Pennsylv.

1555. 410. S. *pulveracea*, F. 330, Syn. Car. 200, passim, Bethl.

*1556. 411. S. *ovoidea*, F. 331, ad ligna exsiccata, Bethl.

1557. 412. S. notha, L. v. S., Syn. Car. 235, abnormis F. 333, nondum mihi in Pennsylv. obvia.

*1558. 413. S. *myriocarpa*, F. 332, frequens Bethl. in lignis terrae dejectis.

*1559. 414. S. millegrana, L. v. S., non rara ad ligna exsiccata cortice orbata Bethl. Plagis longis latisque quasi effiguratis ligna occupans.

S. minutissima, plagis magnis effusa, singulis peritheciis nudo oculo vix distinguendis. Lente adhibita vides perithecia innumera seriatim juxtaposita sed non confluentia, globosa, minutim punctato-rugosa, in perfectissimis abientia apice paulo attenuato in ostiola pertusa, globulo spermatico ascifero magno coronata; demum intus evacuata. Juniore aetate perithecia fibris ligni subtecta, certo modo albescens, demum denudata aterrima.

*1560. 415. S. transversalis, L. v. S., passim in ramis junioribus putridis *Liriodendri*, Salem. Fere semper transversim et ramum quasi annulo cingens ubi epidermide orbatus est, lineis nigris e fibris corticalibus erumpit.

S. Peritheciis minutissimis ovatis aggregatis, aterrimis, punctato-rugosis, manifestim ostiolatis papilla brevi, formantibus lineas nigras transversim ramulum cingentes; demum evacuatis, spermatico globulo albo coronatis. Primum fibris corticalibus albescentibus subtecta, demum denudat. Priori affinis, sed differt modo crescendi.

*1561. 416. S. aggregata, L. v. S., in lignis cariosissimis mollibus plagis majusculis nigris, Bethlehem rarior.

S. Peritheciis duplo majoribus quam in priori, densissime aggregatis nec tamen confluentibus, globoso-applanatis, leviusculis, nigro-subfuscescentibus, et circum ostiola plerumque cinerascentibus. Ostiolo brevi, cylindrico-conico, demum deciduo—tum peritheciis pertusis.

*1562. 417. S. Hydrangeae, L. v. S., rara in epidermide ramorum Hydrangeae, etiam e libro corticali sub epidermide prorumpens, Bethl.

S. sparsa, epidermide insidens, rotundato-applanata, nigra, demum collapsa, ostiolo papilliforme etiam tum persistente. In iisdem ramis observantur etiam specimina ex libro corticali prorumpentia (vix alteram speciem sistentia) valde a prioribus abhorrentia, forma ostiolorum crassorum et tertiam partem perithecii aequantium, ore fere platystoma per epidermidem prospicientia, ceterum tecta.

*1563. 418. S. nigrobrunnea, L. v. S., in palis Robiniae cortice orbatis, Bethl.

S. sparsa, nigrobrunnea, in maculis concoloribus sita. Peritheciis ovatis, rugosis, attenuatis in ostiola indistincta, majusculis mixtis multo minoribus, demum saepe collapsis. Primum fibris ligni subobtecta; demum denudata.

*1564. 419. S. inconstans, L. v. S., rariter occurrit Bethl. sub epidermide Rhododendri maximi oriens, demum denudata.

S. major prioribus, gregatim e fibris corticis interioris prorumpens, mire varians forma; demum confluens. Peritheciis enim gaudet globosis, difformibus, cylindricis, et apice ventricosis, omnibus nigris, rugosis, ostiolis plus minusve elevatis, cylindricis semper ore umbilicato. Junior epidermide tecta, et tum sola ostiola protruduntur. Demum denudata, et saepe diffracta partem inferiorem pezizulae ad instar relinquens.

*1565. 420. S. SUBFASCICULATA, L. v. S., in ramis dejectis Vitis corruptissimae, Bethl.

S. primum subtecta, demum omnino denudata, affinis S. Bombardae, sed magis sparsa et quasi longitudinaliter seriata. Peritheciis subfasciculatis nigris, vix mollibus, interdum omnino forma S. Bombardae, saepe autem minus elongatis, subrotundis ac obtuse papillatis, minoribus et inter se confluentibus.

*1566. 421. S. INSPISSA, L. v. S., rarius prope Lebanon Pennsylvaniae in lignis induratis.

S. densissime inspissa inter fibros ligni canescentis, pluvio solutos, et subelevatos, peritheciis subjacentibus, demum denudatis. Peritheciis atris globosis rugosis, ostiolo papillari deciduo; aetate subcollapsis, minutissimis. Aut sese insuper aggregatis aut etiam subinde sparsis.

*1567. 422. S. BRUNNEA, L. v. S., rarius ad ramos decorticatos varios, Bethl.

S. sparsa, peritheciis maximis, semi-immersis, glaberrimis brunneo-fuscis, depresso-globosis aut hemisphaericis, ostiolo acuto nigro, basi subpruinosa. Diameter linearis.

Trib. 20. PERTUSAE.

1568. 423. S. LECYTHEA, L. v. S., Syn. Car. 155, F. 334. Rara in Pennsylvania, varietate minori, atra.

1569. 424. S. *mobilis*, F. 335, Syn. Car. 198, et passim Pennsylv.

*1570. 425. S. *papillata*, F. 337, in ligno salicino Bethlehem.

1571. 426. S. PUTAMINUM, L. v. S., Syn. Car. 165, F. 338, var. β, in nucibus Juglandinis freq. Pennsylvania.

1572. 427. S. PAPILLA, L. v. S., Syn. Car. 150, F. 340, in Carolina et in Erie County, Pennsylvania, obvia.

*1573. 428. S. *mycophila*, F. 341, in subulis Hydni exoleti mihi rarius obvia Bethl.

*1574. 429. S. *applanata*, F. 343, frequens Bethlehem ad truncos orbatos Robiniae, evidenter rugosa.

1575. 430. S. *mastoidea*, F. 345, Syn. Car. 176, *albicans*, nondum obvia Pennsylv.

1576. 431. S. *seminuda*, F. 346, Syn. Car. 177, in Pennsylv. mihi in cortice crescens obvia.

*1577. 432. S. *latericolla*, F. 347, peritheciis sparsis, Bethl.

1578. 433. S. *pertusa*, F. 348, Syn. Car. 202, vulgaris, et. Pennsylv.

*1579. 434. S. *taphrina*, F. 349, in lignis vetustis, Bethl.

*1580. 435. S. *aspegreenii*, F. 350, rara in cariosis lignis ibid.

*1581. 436. S. *umbonata*, F. 342, in putrido ligno Juglandis cinereae, Bethl.

*1582. 437. S. *picastra*, F. 344, saltem proxima Bethl.

*1583. 438. S. *Surculi*, F. 354, in ramis denudatis Sambuci, ibid.

1584. 439. S. *parphyrostoma*, F. 351 (Syn. Car. 204, rhodostoma perperam). An nova? convenit quidem, sed loco omnino differt, limbo etiam non purpurascenti sed vivide cinnabarino, quasi stellato, postquam papilla excutitur. Perithecia valde rugulosa sunt et apice applanata, et basi quasi crustam habet in ligno effusam.

*1585. 440. S. *vilis*, F. 353, non rara Bethl.

*1586. 441. S. *nucula*, F. 352, habitu quodam triangulari, Bethl. passim.

*1587. 442. S. INCLINATA, L. v. S., passim in ramulis tenerrimis variorum Viburnorum Bethl. inventa, u. c. V. dentati.

S. sparsim et aggregatim erumpens ex fibris libri corticalis epidermide orbati, primum immersa, demum nudata. Peritheciis ovatis, globosis minutis, oblique inclinatis cum ostiolo, pro ratione majusculo, demum deciduo. Tum peritheciis pertusis, ceterum atris, rugosis.

*1588. 443. S. APERTA, L. v. S., rarior in lignis cariosis Rhododendri, Bethl.

S. subcrustacea, nigra, aggregata. Peritheciis tamen sparsis, semi-immersis, majusculis, parum cylindrico-elevatis, apice truncatis, collapsis, papilla majuscula subindistincte formata, mox decidua, tum ore majore orbiculatim pertusis, concentrice extus striatis, sed vix rugosis.

*1589. 444. S. GLANDICOLA, L. v. S., valde frequens in glandibus quercinis, Bethl.

S. sparsa, ac aggregata, non immersa, primum tamen tenerrima epidermide glandis tecta, demum

nuda. Peritheciis atris, minutis, globosis, instructis ostiolo brevi confluente, et demum pertusis. Differt a S. putaminum exilitate et peritheciis non conicis. Ceterum punctato-rugosa.

*1590. 445. S. Pericarpii, L. v. S., frequens utrinque in Pericarpiis Juglandium (Hickory) crassis, praesertim in interiori latere. Salem et Bethl.

S. sparsa, nigra, oblongo-ovata, primum immersa, demum nuda, abiens in ostiolum acutiusculum cum perithecio confluens. Denudata tamen innata pericarpio se ostendit. Peritheciis laeviusculis, evacuatis, plerumque pertusis orificio minutissimo.

*1591. 446. S. tingens, L. v. S., in rimis corticalibus ramorum juniorum Sassafras, Bethl.

S. sparsa, conice rostrata, primum immersa, demum insidens basi applanata. Peritheciis compresso-conicis, rostratis ostiolo rudi obtuso crassiusculo subnitente, vix rugosis. Circum singula perithecia corticem nigro tingit.

*1592. 447. S. albomaculans, L. v. S., distinctissima in emortuis truncis Syringae ubi cortice orbati sunt, Bethl. An hujus aut prioris tribus?

S. sparsa, in macula determinata exalbata sita, aterrima, ad basin plerumque materia virente pulverulenta circumdata. Peritheciis aterrimis, hemisphaerico-difformibus, mediocribus, semi-immersis, punctatis, acutim papillatis; saepe ostiola observantur plura connata quasi ex duobus aut tribus peritheciis confluentibus ut unum ostiolum assurgentia subrotundum et varie compressum—demum pertusum aut subrimose apertum.

*1593. 448. S. Diderma, L. v. S., memorabilis species in ligno carioso sicco, Bethl.

S. sparsa, simplex, majuscula, bicorticata. Cortex exterior sphaeriam denudatam, hemisphaericam aut conicam rugosam, nigrofuscam, ligno insidentem exhibet, ostiolo papillato primum prominente, quo deciduo, pertusam. Sub hoc cortice externo apparet Sphaeria ligno immersa etiam nigro corticata et subinde collapsa, collo elongato cum ostiolo externo communicans.

*1594. 449. S. caryophaga, L. v. S., in nucibus putridis Jugland. albae et tomentos. Bethl.

S. gregaria, regularis, mediocri magnitudine, plagas formans aterrimas subexpansas in nucibus. Peritheciis dimidiatis ex hemisphaerico-subconicis, basi crusta nigra inter se connexis tenui, papillatis, demum pertusis.

*1595. 450. S. elliptica, L. v. S., in Viburno prope Mauch Chunk rarius reperta.

S. majuscula, elliptica, elongata, sparsa, parum tantum elevata, applanata, subimmersa basi, nigra, poro centrali demum pertusa, primum coronata ostiolo papillaeformi, demum deciduo.

*1596. 451. S. deformata, L. v. S., cum priori in iisdem lignis dejectis rarius.

S. late sparsa, minuta, omnino denudatim protrusa, e forma cylindrica deformata, aterrima, superficie subrugosa inaequabili, ostiolo indistincto. Demum pertusa se ostendit.

Trib. 21. Platystomae.

1597. 452. S. *pileata*, F. 358, Syn. Car. 138, etiam in Pennsylv.

*1598. 453. S. *truncata*, F. 357, in ligno Rhododendri Bethl.

1599. 454. S. *crenata*, F. 359, Syn. Car. 136, *cristata*. Huc etiam pertinet var. *spiraeae*, vulgatissima in ramis Spiraeae opulifolia Bethl.

1600. 455. S. *macrostoma*, F. 361, Syn. Car. 137, *dehiscens*, frequens in Pennsylvania in mucidis lignis.

*1601. 456. S. *libera*, F. 361, β, vix mera varietas, Bethl.

1602. 457. S. *compressa*, F. 363, Syn. Car. 138, et Pennsylv.

*1603. 458. S. *angustata*, F. 362, passim Bethl. in lignis.

*1604. 459. S. *curta*, F. 365, bene distincta in corruptissimis ramulis mollibus Bethl.

1605. 460. S. *diminuens*, F. 366, Syn. Car. 139, freq. Bethl.

*1606. 461. S. abbreviata, L. v. S., ad quercinos ramulos, Bethl.

S. subaggregata, prorumpens cum fibris quibus primum ad ostiola usque tecta, demum denudata. Peritheciis globoso-conicis subnitidis, quanquam non glabris. Ostiolo cylindrico-dilatato compresso, satis elongato, centrali, aterrimo, multo tenuiori quam perithecium quod cinerascit aut fuscescit.

*1607. 462. S. Thapsi, L. v. S., vulgaris in caulibus Verbasci Thapsi putrescentibus. Ob affinitatem summam huc referenda, Bethl.

S. sparsa, in macula nigra, locis caulis villositate orbatis. Primum ostiolo solo prorumpens, demum omnino. Peritheciis globoso-conicis, non laevigatis, basi applanato ligno innatis aut subimmersis.

Ostiolo crasso conico compresso elevato, latitudine tamen perithecii duplo minore, demum dehiscente.

*1608. 463. S. VARIABILIS, L. v. S., similis priori, frequens in caulibus Pastinacae, &c. Bethl.

S. fere semper tecta fibris caulis quas secum attollit, ostiolo solummodo compresso difformi, confluente cum perithecio valde variabili, prorumpente. Peritheciis nempe ellipticis, applanatis, rugulosis, plerumque maculae nigrae insidentibus, ex gelatina spermatica sparsa peritheciorum ortae.

*1609. 464. S. SUBRUGOSA, L. v. S., rarissime obvia Bethl. in putrido frustulo Catalpae ligni.

S. sparsa et gregaria, subimmersa ac prorumpens. Peritheciis sphaericis aut elongatis, rima ostiolosa longitudinali, dimidiam latitudinem perithecii adaequante coronatis, ad instar Hysterii dehiscente. Tamen vera sphaeria albofarcta, demum evacuata, nigra, extus minutim rugoso-punctata.

*1610. 465. S. HYSTERIOIDES, L. v. S., prorumpens ex cortice et ligno Kalmiae, Bethl.

S. gregaria et sparsa, peritheciis aggregatis hemisphaericis aut ellipticis, etiam conico-globosis, prominentibus, aterrimis, glaberrimis (pellem, sic dictam, anserinam quasi in ligno efficiens). Apice perithecii truncato subconcavo, ostiolo arcte clauso, per truncaturam in rimam elongata. Totius catervae distinctissima.

Trib. 22. CERATOSTOMAE.

1611. 466. S. SPHAERINCOLA, L. v. S., Syn. Car. 143, perperam ad S. lagenariam relata, a qua omnino abhorret. Rarissime in corrupta S. numularia Carol. obvia.

S. dense gregaria, molliuscula, erecta, nigrescenti-fusca. Peritheciis valde rugosis. Ostiolis mediocribus rigidis obliquis, paululum tantum longioribus peritheciis ovatis.

1612. 467. S. *pilifera*, F. 369, Syn. Car. 141 et 142, nam S. rostrata Syn. Car. eadem. Var. *β dryina* freq. et. Pennsylv.

*1613. 468. S. DRUPIVORA, L. v. S., rarissime in corruptis drupis Juglandis cinereae. Bethl. inveni speciem distinctissimam.

S. conferta, atra, tomento quodam byssoideo, an fortuito? subinvoluta, albo. Peritheciis majusculis pro ratione, hemisphaericis, agmine denso provenientibus. Ostiolis longissimis, fuscobadiis, strictis.

1614. 469. S. *stricta*, F. 372, Syn. Car. 144, vulgaris etiam Bethl.

*1615. 470. S. *brevirostris*, F. 374, in lignis cariosis, Bethlehem.

1616. 471. S. *cirrhosa*, F. 375, Syn. Car. 145, vulgaris et. Bethl.

*1617. 472. S. *mucronata*, F. 376, rara mihi Salem Carol. obvia.

1618. 473. S. SPINA, L. v. S., Syn. Car. 154, F. 377, in ramis fraxineis nec alibi, sed etiam Pennsylv. et ex Nova Anglia.

*1619. 474. S. *rostellata*, F. 379, in stipitibus Rosarum et Ruborum Bethlehem mihi obvia.

*1620. 475. S. *microscopica*, F. 380, elegantula species non tam rara in lignis Bethl.

*1621. 476. S. INVESTITA, L. v. S., in lignis cariosis inventa, emergens ex tomento byssino crassiusculo, badio-ferrugineo aut lutescente, quo omnino vestita. Ceterum S. rostratae valde affinis, equidem eadem, si tomentum adventitium.

S. peritheciis globosis majusculis demum liberis, primum ligno et tomento immersis. Ostiolis magnis longis, rigidis, sulcato-tuberculosis, sursum incrassatis. Peritheciis cum ostiolis atris.

*1622. 477. S. ASSECLA, L. v. S., semper in consortio et circum pustulas variarum Sphaeriarum obvallatarum sub epidermide Castaneae crescit.

S. minutissima, fusca. Peritheciis globosis; ostiolo triplo longiori inclinato, pro ratione crassiusculo tereti. Catervis maximis dense aggregatis interdum semiuncialibus circumdat pustulas aliarum Sphaeriarum. Vix unquam circinnat, sed affinis est S. *pusillae*.

Trib. 23. ORTECTAE.

* *Lignatiles.*

*1623. 478. S. *hiascens*, F. 382, rara in lignis (fagineis?) Bethl. differt tamen peritheciis aggregatis omnino emersis.

1624. 479. S. TUBERCULOSA, L. v. S., Syn. Car. 164, F. 383, rarius et obvia in Pennsylvania Nazarethis in Robinia viscosa.

*1625. 480. S. *astroidea*, F. 384, in trunco Broussonetiae et alibi in vetustis lignis, Bethl.

*1626. 481. S. *eutypa*, F. 385, Bethlehem in Rh. typhina et Populo.

1627. 482. S. *operculata*, F. 386, Syn. Car. 195, Salem et Bethl.

*1628. 483. S. *crypta*, F. 387? ad ligna vetusta, Bethl.

1629. 484. S. *livida*, F. 388, Syn. Car. 196, Bethl. in Rhoi.

*1630. 485. S. *foedans*, F. 389, Salem et Bethl.

*1631. 486. S. *anserina*, F. 390, Bethlehem. Concrescentibus affinis.

*1632. 487. S. LAEVIGATA, L. v. S., in lignis mollioribus, Bethl. Affinis S. eutypae.

S. crustam efficiens longe lateque effusam, contiguam, laevigatam ad 6 uncias extensam, determinato ambitu totum ramum ambientem, nigrescentem. Peritheciis sparsis, magnis, globoso-depressis, ligno ime immersis, evacuatis: ostiolo vix in crusta prominente, tamen ut punctum quasi in superficie conspicuum, collo manifesto cum perithecio connexo. An ad Concrescentes.

*1633. 488. S. INUNDATORUM, L. v. S., lignis flumine Delaware, Kaign's point, immersis, increscit.

S. gregaria, crusta longe lateque effusa rimosa tecta, unde lignum quasi adustum se ostendit. Peritheciis sparsis latentibus sub crusta in ligno, globoso-depressis absque collo, sed ostiolis subpezizoideo-umbilicatis per tuberculum crustaceum subelevatum prorumpentibus, primum applanato globoso subclausis, demum apertis.

*1634. 489. S. EXCUSSA, L. v. S., freq. in ramis junioribus Pyri mali, Bethl. affinis S. foedanti.

S. peritheciis magnis dense sparsis sub epidermide subsoluto libro immersis. Ostiolo punctiformi, primum poro per epidermidem prorumpente, demum denudato. Tum perithecia in conspectum veniunt magna ampullaeformia, rugosa, circumcirca sulcata, in ostiola crassa colliformia elongata, poro latiusculo rotundo perforata. Aetate perithecia facillime e libro excussa, foveolos linquent subrotundos bilineares.

*1635. 490. S. DENUDANS, L. v. S., sub epidermide nascens, demum sese denudans, Bethl.

S. sparsa ac aggregata, oblongo-globosa, depressa. Peritheciis immersis demum prominulis, intus ellipticis, cortice quodam interno cinerascenti vestitis, evacuatis, ceterum nigris. Ostiolis minimis papillatis in apice depresso sitis, interdum Hysterioideis.

*1636. 491. S. ROSAE, L. v. S., in teneris ramulis Rosarum, New Jersey.

S. sparsa, in crusta nigro-fusca sub epidermide longe lateque effusa, primum tecta, demum denudata. Peritheciis crustae subimmersis, hemisphaerice protrusis, oblongo-globosis, rugosis, atris, evacuatis. Ostiolis primum per epidermidem vix prominentibus et nigrotingentibus, demum breviter conicis.

*1637. 492. S. AMPELOS, L. v. S., in valde corruptis ramentis Vitis Bethl. primum epidermide tuta.

S. seriatim distanter sparsa, minuta, circumscissa, subfusca, globoso-applanata. Ostiolo prominente per rimas corticis.

** *Corticolae.*

*1638. 493. S. *ocellata*, F. 391, rarius Bethl. sub cortice Pruni virg.

1639. 494. S. OBTECTA, L. v. S., F. 395, Syn. Car. 206, in ramis fruticum Carolina necdum in Pennsylv.

*1640. 495. S. *vibratilis*, F. 396, sub cortice Pruni virginianae, Bethl.

*1641. 496. S. *lanata*, F. 397, sub cortice Betuli nigrae, ibid.

*1642. 497. S. *paetula*, F. 399, sub epidermide Sambuci, ibid.

*1643. 498. S. *pupula*, F. 401, sub epidermide Platani, Bethl.

1644. 499. S. *circumcissa*, F. 402, Syn. Car. 202, passim et Bethl.

*1645. 500. S. *clandestina*, F. 403, sub epidermide Sambuci, ibid.

*1646. 501. S. *personata*, F. 404, sub epidermide Liriodendri, ibid.

1647. 502. S. *Tiliae*, F. 405, Syn. Car. 205, vulgaris et Bethl.

*1648. 503. S. *pruinosa*, F. 406, Bethl. sub epidermide, Rhoid.

1649. 504. S. *inquinans*, F. 407, Syn. Car. 201, in Acere, &c. Bethl.

*1650. 505. S. *mamillana*, F. 409, ramis junioribus Celastri, ibid.

*1651. 506. S. *clypeata*, F. 410, vulgata in Rosis et Rubis, Sal. et Bethl.

1652. 507. S. GOSSYPII, L. v. S., Syn. Car. 207, F. 412, non in Pennsylv.

*1653. 508. S. *ditopa*, F. 394, sub Liriod. epidermide, Bethl.

*1654. 509. S. *corticis*, F. 393, in ramis junioribus Aceris Pennsylvanicae, Mauch Chunk.

*1655. 510. S. DISTINCTA, L. v. S., sub epidermide Sambuci pubentis, Bethl.

S. sparsa, epidermide tenerrimo obtecta, majuscula, immersa libro albescenti interioris corticis. Peritheciis atris, orbicularibus, depressis, glabris, ore rotundo majore, persistentibus in cortice, epider-

mis avulsae, cum ostiolis eam perforantibus, non prominentibus, cylindricis brevibus, umbilicatis apice.

*1656. 511. S. OLIVACEO-HIRTA, L. v. S., sub epidermide majorum ramorum Mori albae, Bethl.

S. sparsa, majuscula, ostiolis crassis, cylindricis, pertusis, persistentibus, epidermidem penetrantibus, dejecta qua apparent perithecia magna, applanata, circumcirca olivaceo-hirta, librum corticis colore olivaceo-nigro tingentia, subimmersa, gelatina alba farcta dein evacuata.

*1657. 512. S. ALBO-FARCTA, L. v. S., in junioribus ramulis Sassafras, quos longe lateque inquinat colore atro. Bethl.

S. sparsa aut gregaria, atro-inquinans. Peritheciis tectis, cortice omnino immersis, minutissimis, albo-farctis, solummodo sectione cultelli distinguendis, globosis, horizontaliter striatis, indistincte ostiolatis, ostiolo prospiciente per rimulas corticis atro-inquinati.

*1658. 513. S. TENELLA, L. v. S., in libro fibroso Hibisci rosei Hortorum Bethl. sub epidermide.

S. sparsa, nidulans in libro sub epidermide. Peritheciis minutis elliptico-oblongis et globosis, non glabris, nigrofuscis, facillime avulso libro attolluntur—sed manent frustulis subtecta. Ostiolis minutissimis, in conspicuum venientibus inter rimulas epidermidis, quasi ex disco. Interdum plura ostiola ex uno perithecio prorumpere videntur, ceterum globoso-papillata et fere umbilicata.

*1659. 514. S. DAPHNIDIS, L. v. S., sub epidermide emortui Daph. Mezerei horto, Bethl.

S. primum epidermide tecta, demum nuda, immersa libro. Peritheciis globoso-depressis nigro-fuscis tomentosis, demum orbatis, immersis crustae floccosae nigrotinctae. Intus nigro-farctis. Ostiolis primum papillaribus, demum rudibus, deformibus, elevatis, praesertim in denudatis peritheciis aetate rugosis. Nuda specimina majora praecedentibus speciebus. Atro-inquinat.

*1660. 515. S. FUSCESCENS, L. v. S., sub epidermide Castaneorum Salem et Bethl., non immersa, sed parenchymate libri fusci insidens.

S. aggregata et sparsa, primum omnino epidermide tecta, sed hac dejecta, insidet libro omnino libera, saepe tamen cum epidermide attollitur. Peritheciis minutis ovato conicis, rugosissimis, nigris aut fuscescentibus, albo-farctis, interdum collapsis, confluentibus cum ostiolis papillatis, prospicientibus ex epidermidis rimis. Massa spermatica nigrescens, sed vix crustam efficiens circumfusa observatur.

*1661. 516. S. PALLIOLATA, L. v. S., in elongatis ramis non spinosis Rosae corymbosae, Bethl. aemulans S. insititiam et Rosae.

S. subseriatim in rimis epidermidis aggregata in caespitulis ellipticis, interdum confluens. Primum tecta cuticula interna epidermidis albescentis, demum sublibera, sed semper quasi pallio ab hac circumvoluta. Peritheciis majusculis, pro ratione, paucis tantum in caespitulo, globoso-applanatis, aterrimis, punctato-rugosis, ostiolo manifesto papillato.

*1662. 517. S. RUBINA, L. v. S., frequens occurrit sub epidermide Rhois glabri Bethl. An sit Didymosporium?

S. gregaria, longe lateque prorumpens ex epidermide ab ea arcte cincta et satis prominula. Peritheciis aterrimis applanatis, rotundatis, papilla centrali ostiolatis, sporidiis creberrimis profluentibus. Epidermide secedente, in interim pagina observatur crusta contigua corticalis nigra, et ex peritheciis hemisphaericis, nigris, glabris, interjacentibus quasi crebre pustulata.

*1663. 518. S. CONSPERSA, L. v. S., sub epidermide trunci emortui Robiniae viscosae Nazareth in horto academico.

S. gregatim quidem sed tamen sparsa; primum sub epidermide tecta, demum decedente; ostiolis tantum prorumpentibus quasi disco minuto concavo. Epidermide dejecto, perithecia numerosa, aterrima mediocra in conspectum veniunt, basi applanato-rotundata, et ostiolo dejecto, late pertusa-inania. Perfecta autem coronata sunt ostiolo sphaeriaeformi, adaequante dimidiam magnitudinem perithecii. Basis libro subimmersa est, et totum perithecium sporidiis creberrime conspersum aut punctulatum effusis etiam in ambitu. Quodam modo similis Sphaeriae sphaerocephalae nostrae.

Trib. 24. OBTURATAE.

1664. 519. S. SCLEROTIUM, L. v. S., Syn. Car. 163, F. 416, nunquam mihi obvia in Pennsylvania. *Ostropa*, F. S. Veg. p. 110.

*1665. 520. S. *uberiformis*, F. 417, pulcherrima et distincta in ramis putridissimis Betulae, Bethl.

1666. 521. S. ERUMPENS, L. v. S., Syn. Car. 209, F. 419, in ramis Smilacis Carolinae et Pennsylv.

*1667. 522. S. *Syringae*, F. 421, passim in Syringa, Bethl.

*1668. 523. S. *Lonicerae*, F. 422, in L. sempervirenti, ibid.
*1669. 524. S. *tenacella*, F. 423, in ramis junioribus ibid.
*1670. 525. S. *opilata*, F. 425, in virgultis betulignis, ibid.
*1671. 526. S. *Fraxini*, F. 426, etiam in Ulmo Bethl.
*1672. 527. S. *Juglandis*, F. 427, non rara in Juglandinis, ibid.
*1673. 528. S. *palina*, F. 428, locis suis rarior, Bethl.
*1674. 529. S. *pyrina*, F. 429, in Malis frequens ibid.
*1675. 530. S. *strobilina*, F. 431, passim in Conis. Perfectissima in strobilis laricinis, Bethl.
*1676. 531. S. *Verrucaria*, F. 434, in cortice Betulino ib.
*1677. 532. S. RUBORUM, L. v. S., vulgaris in antiquis stipitibus Ruborum, praesertim Rubi strigosae cultae Bethl.
S. sparsa aut gregaria, saepe seriata, sub epidermide mox dejecta. Peritheciis ovato-globosis aut hemisphaericis, paululum immersis libro corticali cum fibris ceterum assurgentibus, atris, rugosis, pro ratione majusculis, tuberculo magno, saepe dimidium perithecium adaequante, coronatis ostioli ad instar, punctato-rugoso. Interdum hoc multo minus evadit. Perithecia demum saepissime dimidiata evacuata, quasi cupulata superstitia remanent.
*1678. 533. S. OLIVASCENS, L. v. S., rarissime Salem in virgultis ignotis.
S. fere omnino tecta epidermide efficiente maculam olivaceo-nigram, quacum perithecia assurgunt minuta hemisphaerica, globosa, albofaeta, demum evacuata. Ostiolo pertuso solummodo prospiciunt ex macula, ceterum omnino tecta, nec ullibi libera.
*1679. 534. S. SUBSIMPLEX, L. v. S., freq. in junioribus ramis Rhoi glabr. frigore emortuis Bethl.
S. primum tenerrima epidermide alba tecta, per quam ostiola prospiciunt: mox orbata, in conspectum veniunt peritheeia dense aggregata, cortici subimmersa, saepe confluentia (unde tantum *sub*simplex dicitur) oblongo-hemisphaerica, depressa, rugosa, atra, papillata: papilla decidua, tum pertusa.
*1680. 535. S. AMORPHULA, L. v. S., in juniorum ramorum Juglandis cortice, Bethl.
S. dense aggregata, imo passim caespitosa, sub epidermide in parenchymate corticali ac insuper epidermidem crescens. Peritheciis amorphis aut polymorphis subconfluentibus parum elevatis, carbonaceis, atris, astomis aut indistincte ostiolatis; albo-farctis.
*1681. 536. S. CAPSULARUM, L. v. S., in variis capsulis plantarum v. c. Convolvuli purpur. Bethl.
S. simplex, sparsa, applanato-hemisphaerica, minuta, papillata, papilla decidua; ad basin cincta tenerrima cinerascente epidermide capsulae cui, statu juniori, innata aut immersa. Peritheciis atris, rugosis, albo-farctis, statu madidiori et juniori intumescentibus et fuscescentibus.
*1682. 537. S. DRUPARUM, L. v. S., an hujus Tribus! sed species valde distincta non infrequens in drupis nucum Juglandis nigrae semiputridis, primum tecta epidermide drupae, demum hae squamulatim dejecta, fere denudata.
S. arctim aggregata, nigra et crustacco-confluens. Peritheciis creberrimis ovatis, rugosis, indistincte ostiolatis, albo-farctis, demum evacuatis. Denudatis demum peritheciis squamulae corticis hinc inde adhaerent.
*1683. 538. S. POMORUM, L. v. S., affinis priori non rara (et minus evoluta jam Salem observata) in pomis exsiccatis per hiemem in arboribus praesertim Cydoniis, Bethl.
S. sparsa et aggregata, quasi insidens crusta nigra sub epidermide tenerrima pomi, quae demum squamulatim rupta decidua est; primum quasi stellatim fissa circum singula perithecia. Peritheciis ovatis, difformibus, magis prominulis quam in priori, rugosis, atris, albo-farctis, minutim papillatis.
*1684. 539. S. LIGUSTRI, L. v. S., in ramulis ligustrinis Bethlehem, Sphaeriam circinnantem revocat.
S. sparsa, crebris speciminibus, prorumpens tantum ex epidermide arctim cingente ostiolis, aut superiori parte perithecii, satis elevata. Ostiolis majusculis globoso-conicis, atris, glabris. Peritheciis deorsum per epidermidem penetrantibus sic ut in aversa pagina secedentis in conspectum veniunt ut bullae majusculae nigrofuscae saepe collapsae, linquentibus foveolos hemisphaericos in libro corticali. Intus nigrofarctis demum evacuatis.
*1685. 540. S. AZALEAE, L. v. S., non infrequens in truncis et ramis emortuis Azaleae nudiflorae, Bethl.
S. per rimas flexuosas epidermidis, quasi seriatim erumpens, immersa libro corticali subjacente Peritheciis vix confluentibus, subdistantibus, minoribus, atris, rugosis cum ostiolo subpezizoideo-umbilicato confluentibus, parietibus internis crassis; evacuatis.
*1686. 541. S. CONCOMITANS, L. v. S., in petiolis majorum foliorum arborum, ubi per ictum Insectarum in gallam ampliati sunt, Bethl.

S. sparsa, prorumpens, primum tecta, minuta, punctiformis fere aut subglobosa, astoma, intus evacuata, atra. Mox collapsa, formam pezizoideam induit.

*1687. 542. S. LINEOLANS, L. v. S., prorumpens in ramis salicinis, Bethl.

S. majuscula, gregarie prorumpens, arcte cincta ab epidermide. Peritheciis pluribus saepe confluentibus in lineolas irregulares, extus ceterum atris, scaberrimis, difformibus aut globoso-applanatis; ostiolis indistinctis, spargentibus sporidia atrofusca, quibus perithecia demum evacuata repleta sunt. Juniori aetate subtecta epidermide elevata.

*1688. 543. S. OBTUSA, L. v. S., caules Rubi villosi gregibus vastis infestat, Bethlehem, antiquissimos.

S. primum epidermide tecta et eam elevans; demum denudata, sparsa, sed agmine denso occupans caules. Ostiolis obtusis subelevatis. Peritheciis nigris obovatis rugosis et difformibus, minutis, nudis aut epidermide basi cinctis. Juniori aetate fuscis subpellucidis, cinctis massa albida subpulveracea demum evanida. Peritheciis albofarctis.

Trib. 25. SUBTECTAE.

1689. 544. S. SPHAEROCEPHALA, L. v. S., Syn. Car. 166, F. 436, solummodo in Carolina observata.

*1690. 545. S. *sarmentorum*, F. 438, in Menispermo et Celastro non rara Bethl.

*1691. 546. S. *sulcata*, F. 439, ramulis junioribus Bignoniae, Bethl.

*1692. 547. S. *saepincola*, F. 440, in rosis et rubis Bethl. freq.

*1693. 548. S. *foveolaris*, F. 443, in ramis fraxineis Bethl., differt aliquomoda ab friesiana—peritheciis nempe majoribus ac minus confertis.

*1694. 549. S. CACTI, L. v. S., Syn. Car. 227, F. 445, Salem tantum.

*1695. 550. S. *Taxi*, F. 447, in Taxo canadensi, Easton.

1696. 551. S. *atrovirens*, F. 448, Syn. Car. 226, in Visco, Salem.

*1697. 552. S. *Buxi*, F. 448, β, vulgaris Bethl. species dist.

*1698. 553. S. *Ilicis*, F. 449, Salem in foliis Ilicis opacae.

*1699. 554. S. *Cucurbitaceorum*, F. 452, in fructu C. lagenariae, Bethl. frequens.

*1700. 555. S. VACCINICOLA, L. v. S., affinis S. saepincola in virgultis Vacciniorum Bethl. β. an diversa in Ceanotho.

S. sparsa, tecta, peritheciis depresso-globosis, subrugosis, evacuatis aut gelatina fuliginosa spermatica repletis, prospicientibus per rimas minutissimas epidermidis, vix papillatis, atris. Valde minuta et subatro-inquinans.

*1701. 556. S. KALMIARUM, L. v. S., frequentissima in foliis dejectis Kalmiae et Rhododendri, cum sequenti valde affinis S. atrovirenti, Salem et Bethl.

S. sparsa, aterrima, immatura tamen turgens et fusca, rarius propellans cirrhulum simplicem brevem fuscum. Peritheciis hemisphaericis, innatis, evacuatis demum. Major S. atrovirenti.

*1702. 557. S. ANDROMEDARUM, L. v. S., in foliis perennantibus, sed corruptis Andromedae axillaris, Salem.

S. sparsa, omnino tecta, innata, minutissima, assurgens cum epidermide non discolorata; ostiolo minutissimo solummodo prospiciente et propullante cirrhulum simplicem candidum. Peritheciis nigris, depresso-globosis, albo-farctis, parenchymate immersis.

*1703. 558. S. SAMARAE, L. v. S., frequens in Samaris Fraxini acuminatae, Bethl.

S. sparsa, primum tecta tenerrima epidermide, quae tum stellatim rupta, perithecia obtusa fere astoma punctato-rugosa, nigrofusca patefacit, repleta massa spermatica alba (siccitate subcornea) demum evacuata. Juniora interdum cirrhulum emittunt simplicem atrofuscum strictum; hac aetate perithecia omnino immersa sunt.

*1704. 559. S. JASMINI, L. v. S., in suculis emortuis Jasmini culti in hortis, Bethl.

S. sparsa, sed passim in quincunx approximata, minuta, fusca, apice albescente, ab epidermide tecta, quacum assurgit. Peritheciis ceterum ellipticis aut subrotundis. Demum cum epidermide collapsis, disco collapso subrugoso. Intus fuscescens, evacuata. Affinis videtur S. Panacis secundum descriptionem.

Trib. 26. CAULINCOLAE.

*1705. 560. S. *pellita*, F. 455, in junioribus ramis Carduorum, Bethl.

*1706. 561. S. *trichostoma*, F. 457, in culmis secalinis Bethl.

*1707. 562. S. *relicina*, F. 459, in culmis cerealium, Bethl.

1708. 563. S. *rubella*, F. 461, Syn. Car. 157, α et β, etiam Pennsylv.

*1709. 564. S. *acuminata*, F. 463, in caulibus plantarum Bethl.
*1710. 565. S. *curvirostris*, F. 464, in caulibus umbellatarum, ib.
1711. 566. S. *acuta*, F. 465, Syn. Car. 152, vulgaris et. Pennsylv.
1712. 567. S. *lingam*, F. 466, Syn. Car. 191, valde protea in variis caulibus et Pennsylv. Interdum in macula nigra epidermidis insidet, tum S. *rudis*, nostra olim.
*1713. 568. S. *complanata*, F. 468, (Syn. Car.) Salem et Bethl.
*1714. 569. S. *coniformis*, F. 469, saepe seriatim in caulibus, ibid.
*1715. 570. S. *suffulta*, F. 470, rarius Bethl. forma ascorum distincta.
1716. 571. S. *doliolum*, F. 471, Syn. Car. 192, et. Pennsylv. vulgaris.
*1717. 572. S. *caulium*, F. 473, Bethl. passim.
*1718. 573. S. *culmifraga*, F. 475, in culmis Tritici, Bethl.
1719. 574. S. *herbarum*, F. 477, Syn. Car. 193, ubique in caulibus.
1720. 575. S. *patella*, F. 478, Syn. Car. 189, vulg. in Pastinaca, Bethl.
*1721. 576. S. *penicillus*, F. 467, in sarmentis Humuli prope flumen Lehigh omnino sarmenta exasperans; Pilis penicillatis demum dejectis.
*1722. 577. S. *Pisi*, F. 472, frequens Bethl. ad caules Pisi, &c.
*1723. 578. S. *Arundinis*, F. 474, ad culmos Zizaniae, Philad.
*1724. 579. S. *scirpicola*, F. 476, rarius in S. atrovirente, Bethl.
*1725. 580. S. *Plinthis*, F. 479, in tenuioribus caulibus et culmis ibid.
*1726. 581. S. VERBASCICOLA, L. v. S., affinis S. *patellae*, vulgatissima in caulibus atque in capsulis Verbasci Bethl.
S. primum tecta, aggregata ac sparsa; initio hemisphaerica rugoso-punctata, nigra: demum regulariter collapsa, applanata. Ostiolo centrali latiori fere hysteriiforme. Saepe latet sub lana caulis detergibili; minor est S. patella. In capsulis evolutior ac varie collapsa.
*1727. 582. S. *nigrella*, F. 480, frequens in variis caulibus macula nigra insidens, Bethl.
*1728. 583. S. *poliota*, F. 481, passim ad caules Bethl.
*1729. 584. S. *galbana*, F. 482, praesertim obvia in caulibus Chenopodiorum et Amaranthorum, Bethl
*1730. 585. S. *disseminata*, F. 484, passim ad caules. Specimina nostra paulo majora quam Friesii.
*1731. 586. S. TECTA, L. v. S., in caulibus plantarum majorum, Bethl.
S. tecta, nec unquam liberata, longe lateque sparsa in caule ibidem obscurius colorato. Peritheciis depressis ellipticis, papilla globosa decidua coronatis, intus albo-farctis. Epidermide caulis circumcirca cinerascente.
*1732. 587. S. MALVICOLA, L. v. S., in libro caulium Malvae Alceae epidermide orbato Bethl. obvia.
S. minuta, subseriata, ex libro prorumpens, demum libera, forma variante; in perfectissimis conica aut etiam globosa, obtusa et deformis, ostiolo confluente perithecio. Peritheciis albo-farctis, demum evacuatis, extus obsitis pilis griseo-nigris, divergentibus; interdum denudatis.
*1733. 588. S. LACTUCARUM, L. v. S., passim in caulibus Lactucarum et Sonchorum, Bethl.
S. omnino tecta, macula fibrillosa cinerea (Dothideae) passim a peritheciis subjacentibus, globoso-depressis, albo-farctis, elevata. Ostiolis atris globosis, umbilicatis prominulis. Longitudine unciali, macula non absimilis S. nebulosae caulem ambit—superficie tamen inaequabili.
*1734. 589. S. TENUISSIMA, L. v. S., in caulibus Polygonati latifolii, Bethl.
S. tecta, sparsa, atronitens: peritheciis astomis atro-fuscovirentibus, tenuissimis, statu vegeto hemisphaericis mox collapsis, per epidermidem conspicuis sed vix denudatis.
*1735. 590. S. NIGRITA, L. v. S., rara in caulibus Verbasci, Bethlehem.
S. solitaria, sparsa, nuda, in ligno caulis Verbasci omnino referens sphaeriam e grege Villosarum. Peritheciis hemisphaericis, demum pezizoideo-collapsis, astomis, undique setis rigidis, nigris, sparsis, longitudine peritheciorum obsitis, ceterum peritheciis glabris.
*1736. 591. S. NAVICULARIS, L. v. S., rara in caulibus mihi solummodo Salem obvia.
S. macula nigra praedita, sed interdum etiam in caule sparsa, forma quadam elliptica naviforme elongata, utrinque obtuse contracta, non glabra, indistincte papillata, demum irregulariter collapsa. Primum cum macula sub epidermide latens, demum semisoluta aut laxissime tantum affixa; substantia carbonacea-pulveracea.
*1737. 592. S. OBTUSATA, L. v. S., in variis stipitibus Bethl. reperta.
S. primum tecta, demum omnino libera, sparsa, majuscula, atra, parenchymate stipitis circumcirca

lutescenti et quasi maculam efficiente. Peritheciis variis, omnibus autem apice obtusatis; e cylindrico-globosis aut rotundatis, satis elevatis, demum subcollapsis, glabris. Ostiolo hysteriiforme tranversali.

*1738. 593. S. PLATYPUS, L. v. S., elegantula propior S. *acutae*, solummodo reperta in caulibus Anemonis virginianae, Bethl.

S. sparsa, aterrima, minuta; junior tecta, sed plerumque nuda obvia. Insidet basi applanata rotundata, margine siccitate subinflexa; a caule faciliter soluta, interdum ambitu sublobato; in hac basi assurgit perithecium conico-globosum, quasi punctatum a sporidiis profluentibus ex ostiolo globoso-papillato; ceterum glabrum et fere nitidum.

*1739. 594. S. POLYGONI SAGITTATI, L. v. S., magna copia occupat (sed rarius) caules emortuos Polygoni sagittati, Bethlehem corruptissimos.

S. sparsa, sed copiose tegens caules, atra, demum omnino libera, primum tecta, applanato-globosa, rugosissima. Ostiolo e cylindrica forma papillato fuscescenti. Interdum observatur basis subeffusa ut in priori.

*1740. 595. S. BRASSICAE, L. v. S., rara in caulibus induratis Brassicae in cellis, Bethl.

S. sparsa erumpens inter fibros caulis, majuscula exacte globosa aut hemisphaerica, nigra aut subfuscescens, astoma, demum rupta, ita ut inferior pars perithecii, irregulariter lacerata et evacuata superstes manet in caule. Peritheciis ceterum extus glabris nisi punctatis a sporidiis profluentibus.

*1741. 596. S. CANNABIS, L. v. S., sub epidermide Cannabis interdum seriata, Salem.

S. sparsa aut seriatim disposita, demum prorumpens ex tenerrima epidermide, minutissima, applanato-globosa, rugosa; ostiolo minuto, quasi vulvaeformi, indistincto. Tota sphaeria facillime decedit cum epidermide.

*1742. 597. S. LACTESCENTIUM, L. v. S., ad inferiorem partem caulium Asclepiadis syriaci, Bethl.

S. densissime aggregata, majuscula, primum sub epidermide tecta, in fibris corticalibus, quibuscum faciliter decedit sita, demum liberata. Peritheciis nigris rugosis subconfluentibus, subconicis et irregularibus, demum subcollapsis, semper autem globulo spermatico candido coronatis. Plagas pedales occupat in caule.

*1743. 598. S. ASCLEPIADIS, L. v. S., frequens in superiori parte caulium Asclep. syriaci, ibid.

S. sparsa, tecta, sed per epidermidem atronitens conspicua oblongo-applanata, parum tantum elevata, passim confluens, extus corrugata, astoma, intus nigro-farcta. Quanquam semper desunt setulae Exosporii, vereor nisi ad hoc genus pertineat. Ceterum valde notabilis species.

*1744. 599. S. DATURAE, L. v. S., in capsulis et stipitibus Daturae Salem ac Bethl.

S. primum tecta, minuta, sub epidermide latens sparsa, vix unquam omnino denudata. Forma peritheciorum applanata. Ceterum peritheciis rugulosis subcollapsis, papillatim ostiolatis—colore nigro-fusco. Occurrit etiam in aculeis Capsulae.

*1745. 600. S. SCAPICOLA, L. v. S., vulgatissima in scapis Yuccae filamentosae cultae, Bethl.

S. minutissima, orbiculata, vix tecta, sed ut puncta densissime sparsa epidermidi tenerrima insidens, nigra, applanata, subcollapsa, rugulosa, puncto centrali quasi papillata vix perceptibili. Haec sphaeria per totum scapum glabratum sparsa, eleganter eum punctulat.

*1746. 601. S. AMPLIATA, L. v. S., an ad Concrescentes? in caulibus Umbellatarum plerumque ex macula indeterminata nigra, Salem.

S. tecta, macula nempe subcorticali late effusa. Peritheciis compressis in ipsa substantia caulis nidulantibus ubi observantur foveoli, post perithecium destructum. Ostiolo crasso, subprominulo, cylindrico, pertuso apice ampliato.

*1747. 602. S. RUBICUNDA, L. v. S., in caulibus Solani et Chenopodii, Salem et Bethl.

S. macula rubicunda aequabili vix determinata, tecta. Peritheciis minutis, nigris, papillatis (papillis seriatim prominentibus) inter epidermidem et librum nidulantibus epidermide rubro-colorato. Affinis S. rubellae.

*1748. 603. S. LILACINA, L. v. S., in caulibus Asclepiadis syriaci, Bethl. S. rubicundae similis.

S. tecta, macula indeterminata semper lilacina. Peritheciis late sparsis nidulantibus sub macula, minutissimis atris, passim subprominentibus.

*1749. 604. S. TAGETICOLA, L. v. S., in caulibus Tagetum in hortis cultis, Bethlehem.

S. tecta, demum sublibera, sparsa in macula epidermidis cinerascenti. Peritheciis minutis, saepe 2—3 confluentibus subseriatis, epidermidem valde elevantibus, albo-farctis. Ostiolis e cylindrico-globosis, valde prominentibus.

*1750. 605. S. Zizaniae, L. v. S., frequens in culmis foliisque Zizaniae, Philadelphia.
S. sparsa, simplicissima, rugulosa, minuta, atra, globosa, immersa, sed in pagina inferiori protrusa. Ostiolo globoso autem punctiformiter impresso, prominente in pagina superiore, quasi sphaerulam mentiente. Pars inferior protrusa aut bullosa hemisphaerica, pro ratione majuscula, interdum collapsa.

*1751. 606. S. Zinniae, L. v. S., in petiolis et pedunculis Zinniae multiflorae Bethl. cultae.
S. erumpens, simplex, sparsa, fibrillulis radiantibus indistinctis circumdata, ovata, nigra, rugosa, minuta, demum ore perforato, interdum collapsa.

*1752. 607. S. evulsa, L. v. S., rarius in sarmentis et caulibus herbarum scandentium Bethl. obvia.
S. sparsa, semilinearis, primum omnino tecta fibris, quibuscum facillime evulsa, cum tantum laxiter insidet. Peritheciis depressis ex basi latiuscula subconice elevatis abientibus in ostiolum minutum perforatum. Cum fibris avulsa, subtus saepe collapsa.

*1753. 608. S. meloplaca, L. v. S., passim Bethl. in majoribus caulibus.
S. gregaria, epidermide tenui primum tecta, demum denudata, in crusta nigra aut subfuscescente subimmersa, quacum satis assurgit et demum penetrat. Tum in conspectum veniunt perithecia crebra difformiter globosa sublibera, astoma, rugosa, nigra, evacuata. Interdum centro impresso subostiolata.

*1754. 609. S. Myrrhis, L. v. S., in tenerrimis ramulis Myrrhis canadensis, Bethl.
S. Maculae fuligineo-cinereae tenerae subdeterminatim effusae, uncialis, angustae nec ambientes quibus insident perithecia sparsa, minuta, e globoso-conica, atrofusca, substantia tenerrima, glabra, subcollabentia, cum ostiolo confluentia, primum ex parenchymate prorumpentia demum superficialia punctiformia. Similitudo quaedam cum S. nebulosa.

*1755. 610. S. echinophila, L. v. S., in spinis Involucrorum Castaneorum freq. Bethl.
S. sparsa, prorumpens, demum nuda, crassitiem spinae excedens; humectata subfusca; sicca, nigra, glabra, fere globosa, ostiolata papilla manifesta acutiuscula.

*1756. 611. S. sulciglna, L. v. S., in antiquissimis culmis Zizaniae, Philad.
S. seriatim sparsa in sulcis culmorum, minutissima, primum epidermide tenerrima tecta, nigrotincta, subimmersa, subrotunda, applanata, papillata; papilla obtusiuscula decidua.

*1757. 612. S. Pastinacae, L. v. S., in caulibus denudatis epidermide Pastinacae, Bethl.
S. sparsa quidem sed effiguratim approximatis peritheciis, citrofuscis, primum epidermide tectis, demum denudatis subrotundo-obovatis aut difformibus, interdum navicularibus, minutis, rugoso-punctatis, papillatis, demum irregulariter collapsis.

Trib. 27. Foliicolae.

*1758. 613. S. *barbata*, F. 486, in foliis tiliaceis, Bethl.

1759. 614. S. Sarraceniae, L. v. S., Syn. Car. 77, F. 492, etiam in Sarracenia, Hope, New Jersey.

*1760. 615. S. *flaccida*, F. 493, Bethlehem in Paeonia.

1761. 616. S. *tubaeformis*, F. 494, Syn. Car. 148, et. Bethl.

*1762. 617. S. *melanostyla*, F. 495, frequens in Tiliae fol. ibid.

1763. 618. S. *Gnomon*, F. 497, Syn. Car. 149, et. Bethl.

1764. 619. S. *setacea*, F. 500, Syn. Car. 150, in folio betulino ibid.

1765. 620. S. *Solani*, F. 501, Syn. Car. 151, et Bethl.

1766. 621. S. petiolorum, L. v. S., Syn. Car. 153, F. 502, etiam in Pennsylvania occurrit in petiolis foliorum.

1767. 622. S. pyramidalis, L. v. S., Syn. Car. 156, F. 505, in Malo.

1768. 623. S. Potentillae, L. v. S., Syn. Car. 208, F. 506, in foliis exsoletis Potentillae canadensis et simplicis etiam frequens in Pennsylv.

*1769. 624. S. Fragariae, L. v. S., frequens vere ad folia exsoleta Fragariarum in hortis, Bethl.
S. sparsa et gregaria, primum folio innata et proveniens in macula grisea bullata paginae superioris. Peritheciis demum emersis, globoso-elongatis, nigris, subrugosis, interdum ostiolo brevi, interdum longissimo cylindrico, immo acuminato, et etiam apice clavato-incrassato, denique in fibrillulas soluto—ceterum deciduo.

*1770. 625. S. Pruina, L. v. S., rara in aversa pagina folii Vitis aestivalis, Bethl.
S. sparsa, minutissima, primum immersa, demum emergens, aterrima, globosa, elongata in ostiolum subsetaceum, atrum, deciduum. Extus pruina alba cum folio tecta.

*1771. 626. S. *sentina*, F. 503, non rara in Vitis folio, Bethl.

1772. 627. S. *artocreas*, F. 516, Syn. Car. 190, praesertim in fol. Castaneis freq. Bethl.

*1773. 628. S. *carpinea*, F. 518, in foliis carpineis Bethl.

*1774. 629. S. *aquilina*, F. 515, vulgaris Bethl. in Pteride.

1775. 630. S. *myriadea*, F. 519, Syn. Car. *dendroides*, 221, vulgatissima in foliis quercinis, Bethl. et Salem.

*1776. 631. S. *recutita*, F. 520, in foliis Caricum majorum Bethl.

1777. 632. S. *maculaeformis*, F. 521, Syn. Car. 219, ubique vulgaris.

1778. 633. S. *punctiformis*, F. 522, Syn. Car. 223, ubique in foliis.

*1779. 634. S. *cruciferarum*, F. 525, in silicalis Cheiranthi, Bethl.

*1780. 635. S. *subradians*, F. 524, in foliis Polygonati, Bethl.

*1781. 636. S. ANGELICAE LUCIDAE, L. v. S., affinis S. Aegopodii in languescentibus foliis Angelicae lucidae, Bethl.

S. sparsa, peritheciis innatis, prominulis, fuscis, astomis collapsis, occupans paginam aversam folii languescentis in macula subcrustacea lutescenti late effusa.

*1782. 637. S. PERIGYNICOLA, L. v. S., passim in perigynio Caricum, praesertim C. xanthophysae monticolae. Pocono. Affinis S. *recutitae*.

S. sparsa, minutissima, astoma, nigra, erumpens, subconico-compressiuscula. Peritheciis demum evacuatis; saepe distanter seriatim erumpentibus.

*1783. 638. S. COPTIS, L. v. S., affinis S. leptideae, &c. frequens obvia in foliis emarcidis Coptis trifoliatae in Pocono monte.

S. sparsa, epidermide innata, convexa, depressa, atra, rugosa, collabescendo-umbilicata, nunquam denudata. Minor S. *leptidea*.

*1784. 639. S. COLLAPSA, L. v. S., rarissima in foliis Pyri Mali, Bethlehem.

S. sparsa, majuscula, aterrima, orbiculata, collapsa, omnino superficialis. Ostiolo papillato-punctiforme non manifestim pertuso in collapsae sphaeriae centro. Ceterum perithecium hemisphaericum, glabrum—exacte collapsum, refert Scutellam Lichenis aut pezizulam.

*1785. 640. S. APERTIUSCULA, L. v. S., rara ab amicissimo Dr Torrey ex New York in aversa pagina folii Ulmi fulvae—altera pagina onusta *Dothidea* Ulmi.

S. sparsa, fusco-nigra, minuta, proveniens ex parenchymate bullato, primum innata; ore maximo demum aperto, et intus evacuata. Pezizulam refert minutissimam.

*1786. 641. S. MORI ALBAE, L. v. S., frequens in foliis emortuis M. albae Bethl., affinis S. maculaeformi.

S. hypophylla, aggregata in macula parva rotunda inaequali. Peritheciis majusculis valde prominulis, rugosis, deformibus, ore coronato globulo albo spermatico, demum deciduo—et tum subaperto.

*1787. 642. S. FRAXICOLA, L. v. S., in aversa pagina folii Fraxini etiam affinis S. maculaefor., Bethl. frequens.

S. hypophylla; peritheciis subinnatis, astomis, nigris, demum fissis orificio longitudinaliter, difformibus, paucis tantum conjunctis maculam atram efficientibus minorem. Maculis quasi confluentibus inter se.

*1788. 643. S. CONVEXULA, L. v. S., S. *punctiformi* proxima, frequens in Juglandinis foliis Bethl.

S. sparsa per totum folium, innata, minuta, subrugosa superficie, tamen nitida, atra, astoma, valde convexo-elevata non collabescens.

*1789. 644. S. ORBICULA, L. v. S., vulgatissima in foliis quercinis praesertim Q. albae Bethl. Affinis S. myriadeae; sed forma maculae perdistincta.

S. in maculis exacte orbiculatis, margine quasi linea nigra limitatis, ob aggregationem peritheciorum in margine perithecia numerosa aggregata sunt. Maculis ¼ uncialibus diametro, cinerascentibus. Peritheciis minutissimis, innatis, nigris, prominentibus pilis longis sparsis obsitis, demum deciduis, concoloribus.

*1790. 645. S. EFFIGURATA, L. v. S., etiam affinis S. myriadeae—sed bene distincta. Frequens obvia in pagina aversa foliorum Fraxini acuminati Bethl. nec in ulla altera specie Fraxini.

S. maculis longe lateque effusis, nigro-cinerascentibus, ambitu determinatim effigurato, et ob frequentiam peritheciorum in margine quasi nigrocincto: saepe totum folium in pagina aversa occupans. Peritheciis innumeris minutis accumulatis in his maculis, astomis, subinnatis, convexulis, nigris valde invicem approximatis, et crusta cinerascenti (ex parenchymate folii?) quasi inter se connexis.

*1791. 646. S. ALBOCRUSTATA, L. v. S., in aversa pagina folii Platani Bethlehem, rarior.

S. Crustae pulveraceae albae cinerascenti indeterminatim vagae effusae insident. Perithecia sparsa nigra, passim inter se in crusta quasi effiguratim aggregata, nec tamen connexa, intus evacuata, primum convexa subrugosa, demum collapsa.

*1792. 647. S. Corni, L. v. S., rara in Pocono in aversa pagina folii Corni floridae.

S. maculas efformans maximas, orbiculatas ambitu, indeterminatas—affinis S. *effiguratae*. Iis densim aggregatae sunt caespites trium aut quatuor peritheciorum punctiformium absque ulla crusta, inter se distantes sed frequentes in eadem macula. Peritheciis ipsis astomis innatis, evacuatis extus punctatis.

1793. 648. S. Polygonati, L. v. S., affinis S. *subradianti*, Bethl.

S. sparsa, peritheciis innatis, utrinque prominentibus hemisphaericis, astomis, atris, albofarctis—sed omnino expertibus fibrillularum S. subradiantis.

*1794. 649. S. herbicola, L. v. S., in foliis plantarum variarum herbacearum, Bethl.

S. latens sub crusta candida longe lateque effusa subhimantioidea. Peritheciis sparsis, nigris, ostiolatis, demum denudatis, crusta permanente tamen circa ostiola. Ostiolis conicis, longitudine peritheciorum, atris, saepe deciduis; tum perithecia globosa pertusa apparent.

*1795. 650. S. cinerascens, L. v. S., passim in foliis putrescentibus Asclepiadis syriaci valde feracis fungillis, Bethl.

S. maculis maximis irregulariter et indeterminatim in utraque pagina effusis, colorem cinerascentem in aversa, nigrum in superiori servantibus, aggregata sunt perithecia innumera, minutissima, atra, innata, subacuminata, astoma aut demum pertusa, sparsa aut inter se effiguratim juncta.

*1796. 651. S. incanescens, L. v. S., in aversa pagina foliorum Tiliae Bethl.

S. maculis incanescentibus, latis, effusis, indeterminatis, quasi pruinatis, insident perithecia punctiformia subglobosa, minutissima, nigra, demum evacuata, saepe quasi truncata, aut collapsa.

*1797. 652. S. subbullans, L. v. S., in superiori pagina Pyri Mali folii Bethl. rara.

S. maculas efficiens nigrescentes bulloso-elevatas, orbiculares, quibus innata sunt perithecia numerosa minuta, ostiolis papillatis solummodo prominentibus.

*1798. 653. S. Andromedae, L. v. S., in perennantibus foliis A. *axillaris*, Salem passim pag. aversa.

S. minuta, innata, sparsa interdum subaggregata, crusta cinerea cincta, atra, convexo-globosa, demum quasi circumscissa, parte superiori decedente. Intus evacuata, et sacculo manifesto praedita.

*1799. 654. S. Nigredo, L. v. S., in aversa pagina folii Rhois glabri frequentissima Bethl. Affinis S. macullariformi.

S. hyphophylla, vix innata; aggregata aut peritheciis acumulatis, majusculis pro ratione, atris rugosis, papillatis gaudens. Ostiolis papillaeformibus subapertis. Passim solitaria. Ubi aggregata sunt perithecia, saepe crusta pulveracea cinerascente, orta ex parenchymate, aspersa.

*1800. 655. S. Staphyleae, L. v. S., vulgatissima obvia in capsulis Staphyleae trifoliatae Bethlehem. Affinis S. punctiformi.

S. sparsa, minuta, innata, rarius aggegata, forma irregulari, applanata, nigra, astoma. Intus evacuata, et sacculo manifesto praedita.

*1801. 656. S. coccineo-maculata, L. v. S., in foliis gramineis—ambiens inter hanc sectionem et tribum sphaeriarum seriatarum, Bethl.

S. macula coccinea indeterminata centro elevatiori. In hac prorumpunt perithecia nigra seriatim aut sine ordine, astoma, oblongata, evacuata. Non absimilis S. rubellae.

*1802. 657. S. Solidaginum, L. v. S., Syn. Car. 225, species distinctissima frequens etiam in Pennsylvania in variis Solidaginibus. Cur a Friesio omissa, nescio. Affinis est quodammodo S. *Potentillae*. Saepe occurrit in consortio Uredinis. Perithecia saepe evadunt majora et subtruncata interdum etiam subostiolata.

*1803. 658. S. excipulans, L. v. S., in folio ignoto semivivo dejecto in horto Nazareth.

S. subaggregata et sparsa in aversa pagina, superficialis nec innata, globosa aut deformis, minuta, aterrima sed furfure quodam cinereo pruinoso extus tecta, ime concava, collapsa, fundo denudata, ostiolo papillato. Excipulam refert—forte est?

*1804. 659. S. tigrinans, L. v. S., hypophylla in foliis quercinis. Affinis est S. *myriadeae* folium quasi maculis cinereo-nigris tigrinans.

S. maculis rotundis et subirregularibus $\frac{1}{6}$ uncialibus cinereo-nigris, centro nigrioribus ob copiam peritheciorum minutissimorum, apparent perithecia tuberculaeformia astomae nigrae.

*1805. 660. S. Phellos, L. v. S., in foliis Quercus Phellos horto Bartrami, Philadelphia.

S. Peritheciis paucis sparsim in macula griseo-fusca aggregatis, pagina aversa innatis, prominulis, subglobosis minutis, nigris, pertusis. In pagina superiori, macula, subimpressa fusco-nigra.

*1806. 661. S. PLANTAGINICOLA, L. v. S., frequens in exsoletis foliis prioris anni P. lanceolatae in terra expansis, Bethl.

S. minuta, punctiformis, aterrima, in pagina utraque innata, subconice elevata, astoma, crebre sed irregulariter sparsa, nitens, intus evacuata sed difficiliter secta.

*1807. 662. S. SILIQUOSARUM, L. v. S., in siliquis inde deformatis Arabis cujusdam a Dr Torrey acceptis, subvigentibus.

S. immaturam siliquam aeque ac folium degenerans. Peritheciis numerosis innatis, sparsis, lutescentibus conicis. Sphaeronema omnino referentibus, globulo spermatico candido, demum pulverulento coronatis. Fungillum ulterius observandum abnormem forsan ad Sphaeronemata referendum.

*1808. 663. S. MAGNOLIAE, L. v. S., affinis S. myriadeae; pagina aversa Magnoliae glaucae foliis prope Kaign's Point, Philad.

S. orbiculatim et effiguratim aggregata, demum ita confluens ut totum folium occupat. Peritheciis tectis, punctiformibus, applanatis, astomis, cum epidermide assurgentibus, demum collapsis, nigris, sed disco albescente. Paginam superiorem folii bullatam reddit.

*1809. 664. S. STILBOSPORANS, L. v. S., in aversa pagina folii Quercini Bethl. rara.

S. peritheciis sparsis, sed tamen effiguratim aggregatis, innatis, sine macula, astomis, applanatis, undique punctatis, et inde Stilbosporam referentibus, ceterum subrotundis aterrimis, minutis.

Depazeae.

*1810. 665. S. D. *buxicola*, F. 3, Bethl. in fol. Buxi.

*1811. 666. S. D. *Pyrolae*, F. 4, vulgaris ibid. in Pyrola.

*1812. 667. S. D. KALMICOLA, L. v. S., vulgaris, Bethl.

S. maculis candidis orbiculatis, margine intumescente cinctis, et folia circumcirca nigricantibus. Peritheciis convexis atris concentricis innatis.

*1813. 668. S. D. *frondicola*, F. 8, in folio Sassafras, Bethl.

*1814. 669. S. D. *castanaecola*, F. 10, freq. Bethl.

1815. 670. S. D. *carpinicola*, F. 9, Syn. Car. 287, Sal. et Bethl.

*1816. 671. S. D. *cornicola*, F. 11, in C. florida, Bethl.

1817. 672. S. D. *Dianthi*, F. 15, Syn. Car. 222, et Bethl. freq.

*1818. 673. S. D. *cruenta*, F. 17, freq. Bethl. in Polygonato.

*1819. 674. S. D. *ribicola*, F. 14, in foliis R. nigri, Betbl.

*1820. 675. S. D. *Aesculicola*, F. 12, in foliis Aesculi ibid.

*1821. 676. S. D. *stemmatea*, F. 2, in foliis Ilicis opacae horti Bartrami, Philadelphia.

*1822. 677. S. D. TULIPIFERAE, L. v. S., in dejectis foliis semiviridibus, Liriod. Bethl.

S. maculis latis, nigro-fuscis, indeterminatis; peritheciis hypophyllis tuberculaeformibus fusco-nigris sparsis.

*1823. 678. S. D. DRYOPHILA, L. v. S. in foliis querneis, Nazareth.

S. macula magna, orbiculatim effigurata, in ambitu cinerea. Peritheciis innatis sparsis globoso-elevatis, centro impresso.

*1824. 679. S. D. CATALPICOLA, L. v. S., in pagina superiori dejectorum foliorum Catalpae.

S. maculis bullatis, griseis, fusco-limitatis. Peritheciis innatis minutissimis, punctiformibus, nigris, densim sparsis.

*1825. 680. S. D. SMILACICOLA, L. v. S., in foliis Smilacis rotundifoliae Bethl.

S. macula subquadrata impressa, rufofusca aut nigra. Peritheciis subconicis, nigris sparsis, innatis in ambitu.

Subordo II. DICHAENI.

Observatio. In hoc et in quarto subordini Sphaeriacearum ultimum in quoque genus, ut ad novam Friesii dispositionem Sphaeriarum pertinens, nempe genus *Gibbera* in hoc, genus *Ascoporu* in quarto subordine, jam in nostro genere *Sphaeria* subsumptum, hic praetermissum. Tertius subordo autem "*Strigulinorum*" omnino tropicus, et nulla species apud nos occurrit, plures autem ex Surinamo mihi communicatae sunt.

Genus 56. Dichaena. Fries. Sys. Veg. p. 108.

*1826. 1. D. *macularis*, (Opegrapha macularis Auctorum) frequens in ramis vivis arborum Salem et Pennsylv.

1827. 2. D. smilacina, L. v. S., Syn. Car. Xylom. F. p. 270, Rhytism. Frequens Salem et Bethl. in ramis emoriendis et emortuis Smilacis rotundifolii. Vix differt a Rhytismate citato—et certissime melius huc.

*1828. 3. D. caespitosa, L. v. S., in cortice fagineo ex Nova Anglia misit Torrey.

D. Peritheciis erumpentibus per velum innatum caespitosim aut plerumque quaternatim, rotundato-subcompressis, fuligineo-nigrescentibus, demum pulverulento-faciscentibus, apice interdum irregulariter porrecto, aut rima abbreviata dehiscentibus. Epidermide subcinerascente cincta, peritheciis elevatis aggregatione quadam in plagas majores nigras.

Genus 57. Ostropa. Fries. Sys. Veg. p. 109.

*1829. 1. O. sphaerioides, L. v. S., in frustulo ligni sicci Nova Anglia misit Torrey.

O. Peritheciis sparsis aut aggregatis sed non confluentibus, majusculis, elliptice rotundatis, cum ligno adscendentibus, subcompressis, atris, subrugosis, rima centrali abbreviata transversim apertis—fere orificio Sphaeriae Pertusae simili.

*1830. 2. O. rugulosa, L. v. S., in trunco jacenti ingenti Juglandis cinereae terrae incumbenti, locis cariosis cortice denudatis et hinc albescentibus, Erie County, Pennsylvania, prope Conneaut Creek.

O. cohortes peritheciorum longe effusae, numerosae et longitudinaliter confluentes. Peritheciis singulis vix distinctis, carbonaceis, extus aterrimis, intus fuscescentibus, striato-rimosis, innatis ligno cinerascente in tuberculum elevato, demum subdehiscentibus. Superficie applanata sunt perithecia et plerumque rugulosa.

*1831. 3. O. hysterioides, L. v. S., rara in lignis quercinis vetustate albescentibus, Bethl.

O. peritheciis saepe longitudinaliter confluentibus, forma navicularibus, striatis, nigris, passim etiam deformibus. Rima transversali, labiis obtusiusculis. Libera insidet ligno, sed evidenter prorupta ex libro carioso; versus basin manifestim contracta, ita ut interdum substipitata evadit more Lophii Ascis diffluentibus.

*1832. 4. O. cinerascens, L. v. S., in ligno denudato Liriodendri Bethl. tenuissime cinerascente sed vix crusta induta.

O. peritheciis sparsis, frequentibus, minutis, tuberculatim elevatis cum ligno, nigrofuscis, longitudinaliter rima notatis aut fissis, ceterum ellipticis, innatis, primum velo tectis. Rima ostiolosa subelevata.

Subordo III. STRIGULINI. Deest.

Subordo IV. DOTHIDINI.

Genus 58. Vermicularia. Fries. Syst. Veget. p. 111. Exosporium, Link. Spec. Plant. tom. vi., p. ii., pagina 120.

Mihi videtur melius huc, quam inter Gymnomycetes Linkii locandum genus. Setaequibus semper gaudet, pro Sporidia habet Link., vix jure. Sporidiorum ab indole omnino abhorrent, nec ullibi invenio sporidia tam constanter affixa, equidem saepissime provenientia ante evolutionem fungi ipsius (Sporidochii, Link.). Difficillime quidem ob minutiam ascis in perithecio observantur—tamen in plurimis speciebus mihi contigit eos distinguere. Tum, ut habet Fricsius, annulati et vermiculati sunt. An duae primae species ad hoc genus pertineant, an genus proprium—nomine *Exosporium* designandum et loco Linkii inter Gymnomycetes locandum efficient—adhuc incertus sum. Tamen mihi probabile videtur, de numero specierum, tam a me aucto, forsan disputandum. Sed accuratiori observatori differentia satis memorabilis videbitur in plurimis—loco naturali observatis. Si alio aliter placeat, nil objiciendum habeo, nisi quod persuasus sum species optimas vix posse stabiliri, sine ampliori descriptione formarum variantium in natura obviarum.

*1833. 1. V. *Tiliae*, Link. p. 121, no. 1, an *Exosporium* Gymnomycetum in ligno Pini Bethlehem var. insignis.

1834. 2. V. *clavuligera*, Link. n. 2, Syn. Car. Conoplea, in truncis salicinis non infreq. Carol. An etiam ad genus propositum *Exosporium*.

*1835. 3. V. *hypodermia*, Link. n. 3, in caule Umbellat. Bethl.

*1836. 4. V. *hispidula*, Lk. 4, rara Bethl. in foliis gramineis.

1837. 5. V. *Dematium*, Lk. 5, Syn. Car. Sph. dematium vulgatissima.

*1838. 6. V. *minuta*, Lk. 6, F. Sph. dematium β 460, in albumine caulium Bethlehem minutissima species.

*1839. 7. V. *trichella*, Lk. 7, F. Sph. 203, in foliis Polygonati, Bethl.

*1840. 8. V. *ditricham*, Lk. 8, F. Sph. 49, in foliis querneis, Bethl.

*1841. 9. V. *maculans*, Lk. 10, praesertim in petiolis Araliae spinosae et in caulibus, Bethl.

*1842. 10. V. thecicola, L. v. S., rarissima species Salem inventa in thecis exsoletis Dicrani scopariae. V. peritheciis minutis difformibus, interdum longitudinaliter confluentibus, subnitentibus, innatis, aterrimis. Setis longiusculis aterrimis, demum densis, sed longitudine inaequali, longioribus divergentibus Peritheciis apice concaviusculis. Minor V. hispidulae cui affinis.

*1843. 11. V. sureffigurata, L. v. S., frequens in variis caulibus Bethl., mire varians. V. primum tecta sub tenera epidermide et more Sphaeriarum cum ea assurgens; perithecium majusculum, quanquam punctiforme, sparsum. Demum denudata, multo major evadit. Peritheciis quodammodo in plagis effiguratis, colore aterrimo insignibus collectis, subelevatis, apice applanatis, numerosis, interdum late confluentibus. Setis inaequalibus, aterrimis, aequantibus altitudine perithecium, rectis, praesertim in apice conspicuis. Plagae occurrunt biunciales, semiunciam latae, distinctae in ambitu filis basilaribus dothidinis radiantibus.

α *scapincola* frequens in scapis Yuccae filamentosae hinc quasi reticulatis. Fere semper simplex et sphaeriomorpha.

β *dianthicola* vulgatissima in caulibus Dianthi chinensis et aliorum, distincta colore aterrimo et magnitudine insigni peritheciorum.

γ *Helianthi* versus radicem in caulibus maximis Helianthi annui—varietat. gigantea.

*1844. 12. V. liliaceorum, L. v. S., frequens Bethlehem in caulibus Hemerocallis, Allii et aliorum Liliaceorum. V. peritheciis plerumque sparsis, primum tectis, innatis, atrosplendentibus, subrotundis aut ellipticis rarius confluentibus. Centro elevato, coronato setis longis, filiformibus undique divergentibus. Ceterum perithecium nudum. Fibrillis basilaribus radiantibus in caule more Dothidearum ut in priori. His interdum fuscescentibus.

*1845. 13. V. bromearum, L. v. S., frequens in caulibus I. coccineae, purpureae, &c. Bethl. V. peritheciis sparsis, globosis, majusculis, nigris, absque nitore, ex epidermide erumpentibus, demum

disco truncato. Setis in apice truncato, densis, subcinerascentibus, altitudinem peritheeii aequantibus.

*1846. 14. V. ACUMINATA, L. v. S., in foliis aut scapis Iridis virginicae Bethlehem freq.
V. peritheciis sparsis, epidermide tectis, utrinque acuminatis, ellipticis, centro elevato, nigronitentibus. Setis paucis longis, subrectis, in apice sitis, inaequalibus nigris. Rarius confluunt.

*1847. 15. V. POLYGONATI, L. v. S., passim in corruptissimis caulibus Polygonati, Bethl.
V. peritheciis e globoso-conicis, manifestim truncatis, nigris, vix nitentibus, sparsis, innatis, demum subliberis. Setis in truncatura sparsis, erectis, rigidis, filiformibus.

*1848. 16. V. POLYGONI VIRGINICI, L. v. S., rarius obvia in caulibus Polygoni virginici, Bethl. sed ubi adest copiosissima.
V. peritheciis sparsis, innatis, nigrosplendentibus vix confluentibus, utrinque arcte acuminatis, centro ex basi latiusculo, valde elevato-conico. Setis brevibus in apice collectis.

*1849. 17. V. ANGUSTATA, L. v. S., in tenerrimis ramulis Catalpae frigore emortuis, Bethl.
V. peritheciis aggregatis in maculas nigras, angustato-elongatis, confluentibus, epidermide omnino tectis. Setis solummodo per rimulas epidermidis prorumpentibus, longiusculis nigris rectis, demum divergentibus.

*1850. 18. V. EFFUSA, L. v. S., rarius ad stipites corruptissimos Ruborum Bethl.
V. peritheciis primum omnino tectis, sparsis, globoso-applanatis; demum confluentibus, epidermide orbatis, nigris, et in maculas late effusis. Setis longis divergentibus, non valde nigris, confusis in macula, i. e. undique provenientibus.

*1851. 19. V. SILPHII, L. v. S., frequens in caulibus Silphii culti in horto Nazareth.
V. peritheciis oblongis, subrotundisve, obtusis, valde applanatis; confluentibus, aggregatis in macula expallente, nigris, tectis. Setis frequentibus, brevibus, atris, prorumpentibus ex epidermide.

*1852. 20. V. BALSAMITAE, L. v. S., rarius in caulibus I. Balsamitae, Bethl. maculas formans.
V. peritheciis innatis rotundatis, parum elevatis, truncato-applanatis, aterrimis; interdum difformibus. Setis brevinsculis concoloribus, plerumque sitis quasi in margine truncaturae nec alibi.

*1853. 21. V. PETIOLORUM, L. v. S., frequens in dejectis petiolis Aesculorum et Catalpae, Bethl.
V. peritheciis sparsis, tectis, aterrimis, parum elevatis, difformibus aut globoso-conicis, frequentissimis, interdum elongatis, angustatis. Setis longissimis divergentibus.

*1854. 22. V. PUNCTANS, L. v. S., rarius in foliis Andropogi avenacei, Bethl.
V. peritheciis sparsis, innatis, nunquam confluentibus; in pagina superiori folii pezizoideis; setis in inferiori pagina conspicuis, brevibus, sparsis, atris, densis, in perithecio punctiformi, rotundo-applanato aut orbiculato.

*1855. 23. V. DENUDATA, L. v. S., in culmis et foliis Poarum, &c. Bethl.
V. peritheciis sparsis, atris, maximis pro ratione culmi teneri, punctiformibus, rotundatis, innatis sed demum erumpentibus, satis elevatis, subtruncatis rugosis. Setis brevibus, *deciduis* (quod singulare). Tum sphaeriam refert.

*1856. 24. V. EPIPHYLLA, L. v. S, rarius in aversa pagina foliorum putridorum, Bethl.
V. peritheciis basi innatis, aut substantia folii immersis, demum erumpentibus, sparsis, juvenilibus subconicis, provectiori aetate, rotundato-applanatis, minutis, aterrimis. Setis subrigidis aut flaccidis concoloribus creberrime in toto perithecii sitis. Crusta quadam albescente ex folio orta circumdata.

*1857. 25. V. GERARDIAE, L. v. S., in exsoletis stipitibus Gerardiae quercifoliae, Bethl.
V. aterrima, irregularis. Peritheciis primum globoso-difformibus, parum elevatis, demum longitudinaliter effusis. Setis inaequalibus undique divergentibus, interdum longissimis, rigidis; pulvere quasi adspersis.

*1858. 26. V. ALBOMACULATA, L. v. S., affinis Sphaeriae Depazeae ribicolae in variis foliis dejectis v. c. Liriodendri, Populi, &c. Bethl.
V. maculis epiphyllis lacteis, latis (v. c. in foliis Liriodendri ubi margine fusco cinctae sunt maculae) aut minoribus (in foliis Populi) suborbiculatis, quibus insident perithecia, sparsa, conico-globosa aterrima, setis tecta longiusculis; ceterum minutissima oculo nudo vix distinguenda, subinnata.

*1859. 27. V. STAPHYLEAE, L. v. S., gregatim in epidermide tenerorum ramorum Staphyleae.
V. peritheciis quasi applanatis subpezizoideis ex epidermide subcorrugata prorumpentibus. Setis aterrimis flexuosis longis. Perithecia acervata sunt quasi subeffiguratim.

*1860. 28. V. ARCTII, L. v. S., rarius in caulibus Arctii Lappae, Bethl.

V. sparsa ac aggregata, epidermide innata. Peritheciis polymorphis atris, semper applanatis. Setis densissime longis, immixtis brevibus, undique divergentibus.

*1861. 29. V. FILICINA, L. v. S., ad caudices Osmundae et Onocleae exoletas, Bethl.

V. peritheciis aggregatis frequenter in macula rubescenti aut expallenti, applanatis, ovalibus, tectis, nigris, prorumpentibus centro elevato. Setis brevibus aut longiusculis, fusco-nigris, subsparsis in apice applanato. Saepissime inveniuntur perithecia setis omnino orbata.

*1862. 30. V. INVOLUCRI, L. v. S., passim in interiori Involucri Aesculi cultae, Bethl.

V. distinctior ceteris. Minima, atra, plerumque globosa et valde elevata, basi constricta. Peritheciis undique obsitis setis, breviusculis in ambitu, confluentibus, innatis interiori epidermidi. Refert Sphaeriam villosam, sed Ascis Vermiculariae et intus quasi similaris.

*1863. 31. V. OVATA, L. v. S., in caulibus plantarum ignotarum Horti, Nazareth.

V. peritheciis aggregatis, aterrimis, primum erumpentibus, demum superficialibus, majusculis, ovatis, applanato-truncatis. Setis filiformibus crebris divergentibus—et in disco subpezizoideo truncaturae frequentibus. Refert primo obtutu pezizulam nigram.

*1864. 32. V. SCANDENTIUM, L. v. S., in caulibus scandentibus v. c. Galii aparinis, Bethl.

V. peritheciis minutissimis atronitidis prorumpentibus plerumque longitudinaliter compressis, tamen utrinque attenuatis aut acuminatis, juniori aetate nudis, in ambitu saepe fuscescentibus. Demum setis parcis filiformibus divergentibus in cacumine tantum sitis coronata.

*1865. 33. V. TRUNCATA, L. v. S., in caulibus, sarmentis ac leguminibus Phaseolorum horti frequens Bethl.

V. peritheciis lineam vix excedentibus, nigris (in leguminibus majoribus), adnatis, confertis, hemisphaericis, horizontaliter truncatis in majoribus; in minoribus irregulariter conico-truncatis, rugulosis. Setis filiformibus praesertim truncaturam occupantibus, divergentibus, longioribus, brevioribus immixtis. Saepe setae caducae sunt, ita ut perithecium orbatur.

Genus 59. DOTHIDEA.

Trib. 1. DENUDATAE.

1866. 1. D. ZEAE, L. v. S., Syn. Car. n. 234, Sphaeria, frequens in Carolina nec in Pennsylvania obvia circum nodos caulis Zeae. Omnino hujus loci. Caule distinguenda a Cladosporio herbaceo indurato frequenter occurrens iisdem locis.

*1867. 2. D. *moriformis*, F. S. M. p. 549, n. 1, rara in ramulis Mori albae, Bethl.

*1868. 3. D. ENCOELIUM, L. v. S., passim obvia in junioribus ramis Gleditsiae Bethl. libro corticali insidens, sed per epidermidem prorumpens, revoluto-fissam. Refert Pezizam Encoelium.

D. Peritheciis caespitosim confluentibus in caespitulum subrotundum, ex epidermide erumpentibus. Caespitem sphaeriarum, centro quasi undulatim depresso, sed nullimodo aperto, refert—extus peritheciis granulatis et furfure fuligineo-fusco, subdetergibili densim tectis, parietibus internis corneis nigro nitentibus. Massa ascigera subcellulosa ceracea, lutescente, primum pellucida, demum subpulverulento-fatiscente, intus repleta. Diameter caespitis lineam excedit, et multae sparsae sunt per epidermidem.

Trib. 2. ERUMPENTES.

*1869. 4. D. *atra*, F. p. 550, n. 4, rarissima sed una vice in cortice Hibisci rosae sinensis Easton magna copia.

1870. 5. D. *ribesia*, F. 5, Syn. Car. 22, Sphaeria; vulgaris et Pennsylv.

1871. 6. D. *Sambuci*, F. 6, Syn. Car. 23, Sph. vulgatissima et Pennsylv.

*1872. 7. D. *Mezerei*, F. 7, in trunco emortuo Daphnidis, Bethl.

1873. 8. D. *sphaeroides*, F. 11, Syn. Car. *Sclerotium*, 319, frequens Salem et Bethl. in ramis Populi italicae.

*1874. 9. D. RADICALIS, L. v. S., in defossis radicibus arborum Bethl. affinis priori.

D. erumpens, simplex sed fasciculatim proveniens, epidermide cincta. Peritheciis subrotundis et difformibus atris punctato-rugosissimis, apice plicato depressis. Intus albo-farctis, cellula unica conspicua. Demum, ut videtur, perithecia subaperta, massam albidam subgrumoso-ceraceam ostendunt internam. Diametro lineari.

*1875. 10. D. CAPREOLATAE, L. v. S., erumpens ex corruptis ramulis Bignoniae capreolatae, Salem.
D. atra, erumpens, subrotunda aut difformis, epidermide stellatim cincta, saepe confluens. Superficie externa primum marginata depressa, demum granulata rugosa. Intus e fuligineo-nigra, cellulis periphaericis minutis albo-farctis. Substantia molliuscula major D. Ribesiae affini.

*1876. 11. D. ROBINIAE, L. v. S., in junioribus ramis Robiniae, Bethl. non rara.
D. erumpens caespitulis minutis subrotundis convexis, undulatim confluentibus, aterrimis. E sphaerulis 3—4 majusculis, rugulosis, globoso-depressis, passim subostiolatis constare videtur caespitulus. Intus concolor, cellulis minimis albo-farctis. Multo minor priori.

*1877. 12. D. RHUINA, L. v. S., frequens in putridis ramis junioribus Rhois radicantis Salem et Bethl.
D. minuta, erumpens ex epidermide fissa, valde cum fungo elevata; primum punctiformis, demum caespitulum elongatum, saepe confluentem, atrum, rugoso-punctatum efficiens. Intus concolor.

*1878. 13. D. VIBURNI DENTATI, L. v. S., rara obvia in ramis V. dentati Bethl. distinctissima.
D. minuta, erumpens, nigra, rugosa; saepissime aggregata in caespitulis ovatis, epidermide arctim cinctis et longitudinaliter conjunctis, vix tamen confluentibus: interdum simplex Sphaeriam difformem globoso-turbinatam, brevi pseudo ostiolo praeditam mentiens. Intus farcta massa albocraceа cellulosa.

Trib. 3 et 4. XYLOMA.

* *Polystigma.*

1879. 14. D. *typhina*, F. 13, Syn. Car. Sphaeria, 65, et in Pennsylvania plerumque in Muhlenbergia erecta.

1880. 15. D. *rubra*, F. 14, Syn. Car. pag. 28 in Nota. Etiam in Pennsylv. semper sterilis obvia.

1881. 16. D. ORBICULATA, L. v. S., Syn. Car. *Xyloma*, 21, F. 16, in Diospyro—vix Pennsylv.

1882. 17. D. *Ulmi*, F. 18, foliis ulmeis ex New York, Halsey.

1883. 18. D. *Rhois*, L. v. S., Syn. Car. 274, Xyl. F. 19, Salem et Bethlehem in foliis R. glabri et copallini.

*1884. 19. D. BUMELIAE, L. v. S., in foliis Bumeliae oblongifoliae acceptis a celeberrimo Nuttall ex regione Arkansa. Affinis D. *rubrae*.
D. epiphylla in foliis vegetis, orbiculata, magna, ovata et subdeformata, in utraque pagina conspicua, in superiori eleganter lateritio-rubra subnitens et vernicosa, cellulis paucis sparsis, subelevatis, minutim pseudo ostiolatis. In pagina inferiori lateritio-pallida, absque nitore, cellulis orbiculatim protrusis. Semiunciam longitudine et latitudine interdum excedens.

** *Stigmeae.*

1885. 20. D. HELIOPSIDIS, L. v. S., Syn. Car. *Sphaeria*, 69, F. 23, species distinctissima, Bethlehemis abundantior in caulibus Helianthi divaricati et multiflori; etiam in foliis. Varietatem insignem majorem, caulem non ambientem sed ex caule prorumpentem, peritheciis rugosis, ex Nova Anglia misit Cl. Torrey in caule Asteris.

*1886. 21. D. MISSOURIENSIS, L. v. S., vulgatissima in nucibus vetustis venditioni expositis in foro sub nomine "Pecan Nuts" (Juglandis olivaeformis) ex New Orleans—nempe in nucibus ipsis.
D. efformans maculas effiguratas, e fusco nigronitentes plerumque longitudinaliter productas, interdum tamen latius effusas, confluentes, praesertim in cacumine nucis. Constant ex innumeris minutissimis tuberculis, densissime aggregatis, compresso-difformibus, vix inter se confluentibus, pulverem pyrium forma revocantibus, sed multoties minores. Internam structuram, ob minutiem videre mihi non contigit. Valde distinctus fungus, oculos alliciens.

1887. 22. D. ASTEROMORPHA, L. v. S., Syn. Car. *Sph.* 289, F. 25, solummodo in Carolina mihi obvia.

1888. 23. D. GRAMMA, L. v. S., Syn. Car. *Sph.* 233, in Stylosanthe, Salem.

1889. 24. D. BRACHYSTEMONIS, L. v. S., Syn. Car. *Sph.* 73, F. 27, in foliis Pycnanthemi (Brachystem) Salem.

1890. 25. D. EXASPERANS, L. v. S., Syn. Car. *Sph.* 220, et Bethl.

*1891. 26. D. *stipata*, F. 30, in caulibus Angelicae triquin. Bethl.

*1892. 27. D. CULMICOLA, L. v. S, ad culmos et vaginas Andropogi avenaceae, Bethl.
D. effusa, laxe aggregata in maculas latiores, constans ex tuberculis minutis passim confluentibus etiamque sparsis, angulatis, difformibus, atronitentibus, minimis, prorumpentibus, intus concoloribus.

*1893. 28. D. EFFUSA, L. v. S., in epidermide secedente caulium Helianthi annui, Bethl.

D. longe lateque effusa in maculis determinatis nigris, constantibus ex innumeris minutis peritheciis, elevatis, difformibus nigris, aggregatis, epidermidi innatis confluentibus; sed in ambitu quasi simplicia et in subiculo fibrillosa sita sese ostendunt, transitum ad sequentem familiam efficientia.

*1894. 29. D. GLYCINEOS, L. v. S., secundum descriptionem affinis D. geographicae; elegantissima, frequens in foliis subvigentibus Glycineos monoicae Bethl.

D. in utraque pagina, sed evolutior in aversa efficit maculas nigras effiguratas, rotundas, e longinquo grisecentes, semiunciales. Lente perscrutata ex innumeris peritheciis aterrimis ex epidermide folii prorumpentibus constat, arcte sequentibus venas folii, reticulatim confluentibus in lineolis interruptis, aemulantibus mappam geographicam, rugosis, astomis, oblongo difformibus, intus albofarctis.

*1895. 30. D. FRIGORIS, L. v. S., in junioribus ramulis Viburni frigore enecatis, Bethl.

D. latissime effusa in junioribus glabris ramis, quasi crusta nigra investiens. Lente admota perithecia multa minuta nigra, subtecta, subelevata, punctiformia, apice subumbilicata distinguenda sunt, intus albo-farcta et connexa crusta quadam nigra glabrescente.

*1896. 31. D. FRUCTIGENA, L. v. S., in pomis putridissimis in campo dejectis prope Camden.

D. in maculis $\frac{1}{4}$—$\frac{1}{2}$ uncialibus subcrustaceis, in corrugata epidermidi pomorum putridorum, aggregatae sunt cellulae aut perithecia majuscula, atra, difformia, rugosa, subcornea, primum molliuscula nec tamen tremelloidea, magnitudine dimidiae seminis papaveris, inter se confluentia, interdum apice dehiscentia poro aut rima quadam, et totam crustam occupantia. Fungum memorabilem tantummodo loco citato nec alibi observavi in pomis.

*1897. 32. D. CHALYBEA, L. v. S., frequens obvia in ligno denudato caesarum Kalmiarum subexsiccato Bethl. Etiam passim sub cortice junior.

D. efformans maculam elegantem, primum orbicularem aut effiguratam, semiunciali diametro, colore chalybeo. Demum confluunt maculae et ad 4—6 uncias extensae sunt. Macula videtur demum ex fibrillulis crassiusculis indistinctis constare, margine aut ambitu subdivergentibus. Cellulis frequentibus prominulis, minutis, difformibus nigris, sparsis et interdum confluentibus.

*1898. 33. D. BENIGRANS, L. v. S., cum priori, sed plerumque in ligno Kalmiae antiquiori Bethlehem obvia.

D. longe lateque effusa praesertim longitudinaliter, determinatim effigurata, confluens, exhibens crustam tenuem nigrescentem, cellulis elevatis obsitum, nigris, inordinatis, subrotundo-difformibus, applanatis, intus farctis massa fuscescenti, subceracea. In ambitu crusta subplicata, rugosa. Occurrunt pustulae cellulares majores (lineam longae) quasi pezizulam applanatam nigram, disco aperto subfatiscente, mentientes.

*** *Asteroma.*

*1899. 34. D. LAURI BORBONIAE, L. v. S., in foliis Lauri Borboniae ex Georgia missa ab Leconte amico.

D. macula minuta orbiculari, in ambitu manifestius sed etiam omnino ex fibrillulis radiantibus, conflata, aterrima, laxius imposita pagina superiori folii. Cellulis majusculis centralibus concoloribus, pezizoideis, concavis impositis fibrillulis.

*1900. 35. D. *vernicosa*, F. n. 32, rara Salem et Bethl. caulibus.

*1901. 36. D. PENICILLATA, L. v. S., non infrequens in Scapis Alliorum, &c. Bethl.

D. macula effusa, atronitens e fibrillulis tenerrimis vix distinctis, quasi penicillatim sub epidermide, praesertim longitudinaliter expansis; subinde fuscescentibus. Cellulis subtectis majusculis, subconice elevatis nitentibus. Interdum occurrunt majores simplices extra maculam.

1902. 37. D. *Himantia*, F. 33, Syn. Car. *Sph.* 216, et Pennsylv. vulgaris.

*1903. 38. D. *reticulata*, F. 34, in foliis Iridis, Bethl.

*1904. 39. D. *geographica*, F. 35, in foliis querneis, New York et Bethl.

*1905. 40. D. *Asteroma*, F. 36, in caule Polygonati, Bethl.

*1906. 41. D. *Xanthii*, F. 43, Carolina in foliis Xanthii.

1907. 42. D. DIOSPYRI, Syn. Car. Xylom. 272, F. 39, Carolina.

*1908. 43. D. *Solidaginis*, F. 45, frequens in foliis Solidaginum variorum, Bethl.

*1909. 44. D. POMIGENA, L. v. S., frequens in maturis Pomis dictis "Newton Pippins" Pennsylv. Vide alteram Paginam.

D. *pomigena* maculis orbiculatis laxis, e fibrillulis tenerrimis nigris reticulato-radiantibus, plerumque sterilibus. Cellulis in centro aggregatis, applanatis, majusculis. Maculis vix unquam $\frac{1}{4}$ uncialibus.

*1910. 45. D. Gentianae, L. v. S., subaffinis D. stellari. Rara sed distinctissima in foliis emarcidis Gentianae ochroleucae, Nazareth.

D. maculis irregulariter effusis, ad longitudinem semi-uncialem nigris aut subolivascentibus fere continuis; fibrillulis tenuissimis parenchymate innatis. Cellulis sparsis frequentissimis, subconice-elevatis atronitentibus, demum pertusis.

*1911. 46. D. delicatula, L. v. S., in culmis graminum cerealium, &c. Bethlehem.

D. maculis tenerrimis fibrillosis eleganter ex centro radiantibus, fibrillulis anastomosantibus. Juniores expertes cellularum olivaceo-nigrescentes; seniores cellulis centralibus aggregatis nigris minutissimis.

*1912. 47. D. ramosa, L. v. S., rarior in caulibus praesertim Chenopodii, Bethl.

D. maculis oblongis nigris e fibrillulis ramosis, radiantibus solummodo longitudinaliter, primum subtectis. Cellulis confertis seriatis demum ruptis. Maculae ut in priori minores, 2—3 lineas non excedunt.

*1913. 48. D. crustacea, L. v. S., frequens caules Phytolaccae longe lateque incrustans vernali tempore, crusta vernicosa nigra, Salem et Bethl. E longinquo oculos allicions.

D. maculis maximis, pedalibus saepe, piceis nitentibus late expansis, crustaceo-crassis, siccitate transversim ruptis, et in frustulis secedentibus. Ambitu in junioribus fibrillulae latiores anastomosantes manifestantur, demum quasi daedaleoso-porosae, poris aut cellulis impressis. Passim occurrunt ostiola sparsa globoso-applanata—forsan etiam hae cellulae sunt. Quodammodo affinis D. stellari. Saepissime maculae tam sunt continuae, ut fibrillulae non distinctae sunt; tum caulis quasi pice illita.

*1914. 49. D. elegans, L. v. S., etiam vulgatissima in caulibus Phytolaccae tenerrima epidermidi innata et cum ea decedens, Salem et Pennsylvania.

D. maculis semiuncialibus, olivaceo-virescentibus, demum nigrescentibus conflatis ex fibrillulis ramosis undique divergentibus anastomosantibus: semper figura maculae elliptico-acuminata. Maculae saepe confluunt. Cellulis minutis frequentibus, sparsis, atronitentibus, saepe circumcirca extra maculam vagantibus. Nomen triviale adscriptum cum proxima specie solummodo comparandum—nam Dothideae plures ceterum elegantiores. Phytolacca feracissima est planta specierum.

*1915. 50. D. inelegans, L. v. S., frequens cum priori in caulibus Phytolaccae et Salem et Bethl.

D. maculis minutis, nigris, non nitentibus, crebris, confluentibus, orbiculatim elongatis e fibrillulis ramosis, crassiusculis distinctis e centro radiantibus. Cellulis raris centralibus, subacutis. subelevatis, minutis. Saepe occurrunt fibrillulae radiantes divaricato-ramosae omnino steriles. Congeries macularum magnum spatium occupat in caule.

*1916. 51. D. Phytolaccae, L. v. S., cum ceteris frequens in caulibus Phytolaccae, Bethl.

D. longissime effusis pseudomaculis, non fibrillosis sed solummodo aggregatione cellularum aut peritheciorum formatis, primum incoloratis subtectis, demum cellulis densius prorumpentibus nigrescentibus. Cellulis minutis nigris, subelevatis nitentibus difformibus nigris; primum tectis, demum epidermide triangulariter rupta, prospicientibus. In ambitu cellulae simplices creberrime sparsae.

*1917. 52. D. Hibiscicola, L. v. S., in caulibus Hibisci militaris, &c. Bethl. cultis.

D. maculis orbiculatis, minutis et magnis confluentibus, epidermide tectis, hinc cinerascentibus, e fibrillulis tenerrimis cinereo-nigris radiantibus. Cellulis minutis nigris elevato-prorumpentibus. In majoribus maculis fibrillulae vix distinctae, in minoribus orbiculatis evidentius radiantes centro celluligero aut sterili. Minores sparsae circum majores.

*1918. 53. D. obnans, L. v. S., in caulibus, sed multo elegantior in capsulis Asclepiadis incarnatae, Bethl.

D. maculis magnis angustioribus atronitentibus (minoribus sparsis circumcirca linearibus) conflatis e fibrillulis, solummodo in ambitu distinctis. In his maculis crassiusculis, cellulae aut perithecia frequentia, primum immersa, demum prorumpentia subseriatim locata sunt, satis elevata, in superficie rugoso-rivulosa, elliptice-ovata. In acumine capsularum praecipue occurrunt. In caulibus magis effusae oblongae sobtectae evadunt maculae, ac cinerascunt. Interdum biunciales.

*1919. 54. D. Chenopodii, L. v. S., in maximis caulibus Chenopodiorum, Bethl.

D. maculis mediocribus, contextis e fibrillulis radiantibus, nigrofuscis, crassiusculis, vix ramosis, centraliter elevatis—onustis peritheciis aut cellulis majusculis tectis, globoso-depressis, ostiolatis. Maculae saepe confluunt.

*1920. 55. D. conferta, L. v. S., in caulibus quibusdam ignotis, Bethl.

D. macula atra, conflata e multis minoribus confertis, irregulariter confluentibus, late effusa. Centro apparent cellulae aut perithecia atra, elevata, albo-farcta longitudinaliter confluentia.

*1921. 56. D. NIGRESCENS, L. v. S., in caulibus Zeae rarior. Affinis D. Himantiae, Bethl.

D. maculis e fibrillulis irregulariter radiantibus, nigris, crassiusculis, interruptis non nitentibus, minoribus, passim confluentibus. Peritheciis minutis subelevatis nigris centralibus demum pezizoideis. Caules exasperant.

*1921. 57. D. DISPERSA, L. v. S., in ignotis caulibus, Bethl.

D. maculas quidem longe effusas efformans nec tamen contiguas sed ex multis interruptim dispersis minoribus atris conflatas ; fibrillulis hinc inde transversim expansis. Peritheciis aut cellulis applanatis longitudinaliter fissis. Frequenter occurrunt simplicia minutissima macula aut vix ulla insidentia sparsa.

*1922. 58. D. SILPHII, L. v. S., in ditissimis caulibus Silphii culti Nazareth in horto.

D. maculis minoribus, utrinque acuminatis, fibrillulis nigro-fuscis simplicibus radiantibus nec anastomosantibus. Cellulis crebris aggregatis, truncatis, subpezizoideis; primum epidermide cinerascente quacum elevatae sunt, tectis, demum nudis. In tectis apparent pseudostiola.

*1923. 59. D. CEPAE, L. v. S , rara sed distinctissima in exterioribus integumentis bulborum Cepae exoletorum, ex Philadelphia.

D. maculis ex olivaceo, picco-nigris orbiculatis, confluentibus, e fibrillulis crassis dendritice ramosis radiantibus, anastomosantibus sese superimpositis. Cellulis globoso-elevatis centralibus raris nigris.

*1924. 60. D. DIOSCORAEAE, L. v. S., in Capsulis Dioscoraeae glaucae frequens, Bethl.

D. maculis fibrillosis omnino tectis, fibrillulis parenchymate innatis tenerrimis irregulariter radiantibus, griseo-olivaceis, demum nigris. Cellulis sparsis frequentibus, nigris, acutis et truncatis. Saepe singulae sphaeriaeformes circumcirca maculam sparsae. Maculis orbiculatis minutis.

*1925. 61. D. PANICI, L. v. S., in foliis Panici ciliati et aliorum, Salem et Bethl.

D. maculis griseis tenuissimis linearibus, longitudinaliter et paralleliter confluentibus intra nervos; fibrillulis vix distinguendis. Cellulis minutissimis subseriatim dispositis in aversa pagina. Vix Sphaeria? Maculae minutae sed multae in folio.

*1926. 62. D. IMPATIENTIS, L. v. S., ad nodos caulium Impatientis fulvae, Salem et Bethl.

D. maculis piceis effusis nigerrimis tenuibus, subtectis, ovato-acuminatis, latis, in ambitu effiguratis; Cellulis minutissimis tuberculaeformibus, crebris, albo-farctis. Plerumque sterilis. Fibrillulae vix distinguendae etiam ope lentis.

*1927. 63. D. ASCLEPIADIS, L. v. S., frequens in caulibus emortuis Asclep. syriacae, Bethl.

D. epidermide tenuissima tecta, longe lateque effusa, pseudomaculam efformans, ex multis minoribus maculis confluentibus conflatam. Hae minutae maculae ex fibrillulis radiantibus sed tam dense contextis ut singulae non distinguentur circumdant perithecia nigronitentia, elevata, tuberculaeformia celluloso-ovata, unicum in quaque—inter se tamen dense aggregatae sunt. Totum agmen saepe 6 unciale.

*1928. 64. D. CINERASCENS, L. v. S., cum priori, etiam longissime effusa, Bethl.

D. semper tecta, maculis indeterminatim undique effusis, contiguis, cinerascentibus per epidermidem, ex qua erumpunt perithecia aut cellulae ostiolomorphae, atrae applanatae, minutissima. Epidermide remota, distincter apparet maculam constare ex multis minoribus, in ipso libro caulis e fibrillulis fusco-griseis ramosis e centro radiantibus formatam.

*1929. 65. D. LINEOLA, L. v. S., frequens occurrit in scapis Liliacearum, Hemerocallis, Bethlehem et Salem.

D. maculis minutis linearibus elongatis tectis, e fibrillulis ramoso-divaricatis, e centro radiantibus elevato-cinerascentibus. Cellulis aut peritheciis prorumpentibus applanatis, nigerrimis, intus albo-farctis. Singula perithecia sparsa frequenter obvia extra maculam.

*1930. 66. D. SCAPINCOLA, L. v. S., versus basin scaporum Yuccae filamentosae, Bethl. cult.

D. macula tecta epidermide tenui et inde cinerascens. Peritheciis irregularibus, atronitentibus, hemisphaericis et demum subpezizoideis, circumcirca sparsis. Epidermide detrita, maculae 1—½ unciales se ostendunt ex fibrillulis atris subinterruptis indistinctis contextae, plerumque elliptico-acuminatae.

*1931. 67. D. PHLOGIS, L. v. S., frequens in caulibus Phlogis undulatae cultae, Bethl.

D. maculis nigro-fuscis angustioribus, indistincte determinatis, quasi linearibus, non tectis, ex aggregatis minutissimis cellulis, fibrillularum expertibus, formatis.

*1932. 68. D. POLYGONATI, L. v. S., in variis speciebus Polygonatorum, caulibus insidens, Bethl.

D. vix maculans, sed omnino constans ex multis aggregatis cellulis majusculis atronitentibus, ellipticis, epidermide tectis sed centro hysteriiforme subelevato prorumpente.

*1933. 69. D. NODICOLA, L. v. S., circum nodos in petiolis Araliae spinosae, Bethl.

D. omnino expers fibrillarum; maculis minoribus linearibus—elongatis aut ovatis, utrinque acuminatis, ex cellulis corrugatis, semper tectis, elevatis, atronitentibus, irregulariter globoso-applanatis, intus albo-farctis, conformatis.

*1934. 70. D. ELLIPTICA, L. v. S., rarius occurrit in caulibus Collinsoniae, Bethl.

D. maculis indeterminatim circum caulem effusis, confluentibus, nigrescentibus, tectis epidermide. Cellulis minutis nigris tuberculaeformibus. Figura maculae subelliptica. Saepe perithecia alius fungi commixta inveniuntur.

*1935. 71. D. AMBROSIAE, L. v. S., vulgaris in caulibus Ambrosiarum, Bethl.

D. maculis confusis indeterminatis, nigrescenti-fuscis, tectis; fibrillulis rarioribus indistinctis solummodo in junioribus distinguendis. Cellulis aggregatis oblongis, truncato-applanatis, rima impressa longitudinaliter notatis.

*1936. 72. D. VITICOLA, L. v. S., frequens in junioribus ramulis Vitis, frigore enecatis, Bethl.

D. tecta, maculis minoribus confluentibus, nigro-fuscis subvernicosis. Fibrillulis crassis, ramoso-furcatis, radiantibus, plerumque indistinctis. Cellulis elevatis apice applanatis, difformibus.

*1937. 73. D. HYSSOPI, L. v. S., passim ad caules Hyssopi nepetoidis, Bethl.

D. tecta, maculis indeterminatim aut effiguratim expansis, e fusco nigris, minoribus. Fibrillulis transversim radiantibus, tenuissimis, ut in prioribus libro innatis vix distinguendis plerumque. Cellulis numerosis sparsis nigro-nitidis, tuberculaeformibus, minutis, interdum subseriatis, albo-farctis, tectis.

*1938. 74. D. JUGLANDICOLA, L. v. S., rarius in foliis putridis Juglandis albae, Bethl.

D. macula minuta orbiculata, aterrima, semilineari. Cellulis crebris concentrice in macula aggregatis, minutissimis globoso-punctiformibus, demum pezizoideis.

*1939. 75. D. SASSAFRAS, L. v. S., species distinctissima—passim obvia in foliis dejectis putrescentibus (etiam subvigentibus, non evoluta) Lauri Sassafras—et quidem ubi est, in fere omnibus foliis arboris occurrit.

D. maculis latis effusis, fusco-badiis, elegantissime dendritice radiantibus, diametro plusquam unciali, juniore aetate ex latioribus fibrillulis folio quodammodo illitis constare videtur, confluentibus versus centrum et crustam subcontinuam efficientibus. Dothideae stellari non dissimilis. Optime evoluta autem macula faciem alienam induit. Fibrillae dictae radiantes solutae apparent in cellularum congeriem, quaeque cellula nigra suberumpens ex epidermide, primum elevato-convexa, demum pezizoidea, fibrillis veris minutissimis innato-radiantibus circumdata. Maculae dendritica saepe confluunt. Semper in pagina superiori folii.

*1940. 76. D. SUBCUTICULARIS, L. v. S., in pagina superiori foliorum Viburni aut Corni horto cult. Bethl.

D. maculas sparsas, orbiculatim effiguratas, diametro ¼ unciali, cinerascentes efficiens, centro nigro, contextas ex fibrillulis dendritico-radiantibus, ramosis sub tenerrima epidermide folii, hinc subtumida et cinerascente irrepentibus. Cellulis in centro indistincter aggregatis.

*1941. 77. D. ROSAE, L. v. S., in foliis semivirentibus Rosae cultae in hortis Philad.

D. maculas orbiculatim effiguratas sistit, ¼ unciali diametro, saepe confluentes, in pagina superiori, fuligineo-nigrofuscis, contextas e fibrillulis crassiusculis furcato-ramosis radiantibus, centro onustis cellulis majusculis applanatis, statu madidiori, subpezizoideis, primum albo-farctis.

**** *Uniformes.*

*1942. 78. D. *Anemones*, F. 46, rara obvia in Anemone quinquefolia, Bethl.

*1943. 79. D. *Potentillae*, F. 48, valde affinis priori et in nostris non seriato-confluens. In Potentilla canadensi obvia Bethl.

1944. 80. D. *alnea*, F. 51, Syn. Car. Xyl. alnea 286, Bethl.

*1945. 81. D. MACULANS, L. v. S., in foliis querneis Bethl. et ex New York.

D. epiphylla subimpressa, sistens maculas minutas orbiculatas, ex pluribusminoribus aggregatis, applanatis vix confluentibus, tectis, atris, superfice corrugatis et punctatis, concentrice sitis, conformatis. An minores sunt cellulae?

*1946. 82. D. CASTANEAE, L. v. S., in foliis vivis Castanearum Bethl. et New York.

D. epiphylla, minuta, subsparsa, atra, effusa, superficie corrugata, cellulis aggregatis imperfecte evolutis.

1947. 83. D. Fothergillae, L. v. S., Syn. Car. Xyloma 277, maculis minoribus et majoribus fuscis, Salem.

*1948. 84. D. lauricola, L. v. S., vulgaris in foliis Lauri aestivalis, Bethl.

D. epiphylla, maculis tenuibus, superficialibus confluentibus, nigris, crassioribus orbiculatis mixtis.

*1949. 85. D. filicum, L. v. S., in stipitibus variorum Filicum, Bethl. An Lepostroma?

D. maculis minutis elevatis, oblongis, acuminatis minutissimis, cellulis longitudinaliter rimosis in maculis aggregatis, nigro-fuscis, lineatim elongatis.

*1950. 86. D. Polygalae, L. v. S., in foliis Polygalae pubescentis ex Florida acceptis in Herbario obvia.

D. distinctissima in foliis vigentibus, macula fumosa e filis in parenchymate repentibus. Cellulis sparsis subrotundis manifestis, nigris demum apertis, subalbofarctis, cum epidermide elevatis, amphigenis.

***** *Ectostroma.*

1951. 87. D. E. Liriodendri, L. v. S., Syn. Car. 290, Carol. et Pennsylv.

1952. 88. D. E. Toxici, L. v. S., Syn. Car. 278, et Pennsylv. Rh. rad.

1953. 89. D. E. afflata, L. v. S., Syn. Car. 273, X. in foliis Cimicifugae.

1954. 90. D. E. Annonae, L. v. S., Syn. Car. 275, X. in foliis Porceliae, Car.

*1955. 91. D. E. petiolaris, L. v. S., satis frequens in petiolis dejectis Juglandium et aliorum foliorum, Bethl. An Rhytisma?

D. E. picea, illita, maculis crassis late circumcirca effusis, ovato determinatis, margine interdum subliberato et elevato—saepe uncialibus—affinis Rhytismate Urticae, sed semper sterilis mihi obvia.

Ordo II. PHACIDIACEI.

Tribus 1. Patellarei.

Genus 60. Patellaria.

1956. 1. P. *atrata*, F. II. p. 160, frequens Carol. et Pennsylv., Syn. Car. 1248, Peziza.

*1957. 2. P. *difformis*, F. p. 151, Peziza: ad truncum Salicis antiquum versus radicem, Bethl.

*1958. 3. P. Verbasci, L. v. S., passim ad antiquissimas caules Verbasci, Bethl.

P. coriacea, sicca, scutellam Lichenis referens, gregaria et sparsa, adpressa, semper applanata, juniore parum contracta. Margine subplicata. Disco parum elevato pulveraceo, pulvere adglutinato nec detergibili. Diametro 1—2 lineari saepe angulata. Aterrima.

*1959. 4. P. nigro-cinnabarina, L. v. S., pulcherrima, majuscula, non rara occurrens in variis ramulis putrescentibus, v. c. Crataegi, Calycanthi etc. Etiam ex Surinamo teneo, Bethl.

P. Diametro varians 1—6 lineari. Cupulis sessilibus aut brevissime stipitatis, extus olivacco-nigris, coriaceis, margine tumido, eleganter plicato; siccitate arcte inflexo et clauso, fere Hysterium referente, et discum omnino obtegente. Madefactis cupulis, orbiculatim expanduntur discum latiusculum planum 2—3 linearem ostendentes, pulvere cinnabarino, strato crasso, semper obtectum, margine tamen inflexo. Interdum etiam statu sicciore aperta obvia. Sparsim et fasciculatim crescit. Facillime ex ramulo excutitur.

*1960. 5. P. Rhododendri, L. v. S., affinis P. atratae sed colore differt, Bethlehem in ramulis Rhododendri.

P. cupulis sparsis difformibus, fusco-atris, applanato adpressis, marginatis, margine crenato—aut dentatim prominulo. Disco nigro pulverulento. Subgelatinosa. Diametro semilineari.

Genus 61. Tympanis.

*1961. 1. T. *alnea*, F. 174, n. 2, Bethl. in Alno; non est mera varietas T. frangulae.
1962. 2. T. FRAXINI, L. v. S., Syn. Car. Pez. 1262, F. n. 3, et Bethl.
1963. 3. T. PLICATO-CRENATA, L. v. S., Syn. Car. Pez. 1257, F. n. 4, Carol.
1964. 4. T. *conspersa*, F. 6, frequens Salem et Bethl. in Pyro.
1965. 5. T. VITICOLA, L. v. S., Syn. Car. Pez. 1265, frequens et Bethl. in Viti—F. n. 8.
*1966. 6. T. CINERASCENS, L. v. S., in putridissimo ramo ignoto horti Easton; ibidem freq.
T. sessilis, majuscula, gregaria, prorumpens ex epidermide elevata, cupulas cingente. Cupulis rotundis aut difformibus, lobatisque et subconfluentibus. Disco marginato, impresso, aut umbonato et etiam tuberculoso. Velo cinereo, primum clauso, demum evanido: tunc omnino nigra, pulvere seminali tecta.
*1967. 7. T. FASCICULATA, L. v. S., ex epidermide ramorum fruticis ignoti erumpens, Bethl.
T. subsessilis, minor, fasciculatim erumpens, epidermide cincta. Cupulis fusco-nigris, varie tortis difformibus, marginibus inflexis subplicatis, disco excavato. Junior clausa, subsphaeriaeformis.
*1968. 8. T. SERIATA, L. v. S., in ligno decorticato longis seriebus provenit rara Bethl.
T. stipitata, concrescens longis seriebus. Primum refert Sphaeriam pyriformem nigram majusculam rugosam in orem prolongatam. Tum aemulat Pezizam ore cootracto, stipite crasso cylindrico, marginibus tumidulis atrovirentibus, disco velato, velo pulverulento albescenti-viridi, ipso atrovirente. Ultimo statu valde dilatatur, disco tuberculato, margine viridi pulverulento, lobato, undulato. Altitudine lineam vix excedit.
*1969. 9. T. TURBINATA, L. v. S., in ramulis exsoletis Diervillae, Bethl. obvia.
T. substipitata, primum erumpens ex epidermide capitulo globoso, sparsim sita, et quasi tuberculis echinata fusco-nigra. Demum refert Pezizam turbinato-obconicam, marginibus tumidulis, fere clausis, disco poriforme, tandem apertiusculo. Extus striata. Altitudine lineae.

Tribus 2. Dermei.

Genus 62. Dermea.

1970. 1. D. CRATERIUM, L. v. S., Syn. Car. 1175, Tab. 1, Fries. Peziza, p. 74, vulgaris et maxima etiam Pennsylvania primo vere; semper ad ramos aut truncos in terra jacentes. Tomento basilari saepe insuper terram expanso. Specimina dense caespitosa pedalia et 6 uncias alta interdum mihi obvia. Juniori statu saepe extus eleganter badio-furfuracea.
*1971. 2. D. *fascicularis*, F. p. 75, in Pyro malo Bethl.
*1972. 3. D. POPULNEA, L. v. S., omnino differt a priori. Bethl. rara in Populo italica.
D. sessilis, caespitosa, coriaceo-membranacea, minor, ovata aut oblonga, fere semper clausa, extus cinerea furfuracea, intus nigra. Singulae cupulae sphaeriaeformes clausae sunt quasi pulvinatim—rarissime apertae obviae. Semilineam vix excedunt altitudine.
*1973. 4. D. CYDONIAE, L. v. S., rara in emortuis ramis Cydoniae, Bethl.
D. sparsa, simplex, sessilis, applanato-adpressa, difformis aut subrotundo-undulata; extus furfure albido crasso pulverulento tecta, marginibus tumidis, arcte inflexis; disco fusco-badio, aut subcinnamomeo. Diametro 2—3 linearis.
*1974. 5. D. *Cerasi*, F. p. 179, n. 3, Cenang. frequens et Salem et Pennsylv. in ramis Cerasorum.
*1975. 6. D. SPIRAEAE, L. v. S., in ramis Spiraeae opulifoliae rarior, Bethl.
D. subsimplex, aut 2—3 in caespitulo. Cupulis siccis conniventibus: madidis apertissimis, extus brunneo-fuscis furfuraceo-strigosis; disco badio. Minor; nunquam duas lineas excedens diametro.
*1976. 7. D. *fissa*, F. p. 75, Peziza, rara in ramis ignotis Nazareth obvia.
1977. 8. D. *furfuracea*, F. p. 75, Peziz. Syn. Car. 1254, in ramis Coryleis Salem et Bethlehem.

Genus 63. Cenangium.

1. *Scleroderris.*

*1978. 1. C. Ribis, F. p. 179, n. 1, rara Bethl. in Ribi.

1979. 2. C. clavatum, L. v. S., Syn. Car. 1176, F. n. 2, solummodo in Carolina.

1980. 3. C. *prunastri*, F. n. 4, Syn. Car. 1259, vulgare Bethl.

*1981. 4. C. *rigidum*, var. F. n. 4. Certissime species distincta nostra vulgatissima in ramis persiccis Salem et Bethlehem, cum prior praesertim Bethlehem in ramis crassis Pyri Mali obvia.

1982. 5. C. Rhois, L. v. S., non infrequens in Rhois glabrae ramis Salem et Bethl. Affinis C. Aucupariae et cum hac confusa, Syn. Carol. n. 1127.

C. caespitosum, albido-pulverulentum, sphaeriaeforme, demum apertum; caespitulis minutis, fere semper circumdatis pulvere ex cortice orto.

*1983. 6. C. *laminare*, F. n. 6, in ramis Betulae carpinifoliae Bethl. rarius.

1984. 7. C. Andromedae, L. v. S, Syn. Car. 1261, F. 8, frequens in Carolina.

1985. 8. C. triangulare, L. v. S., Syn. Car. 1255, F. 9, vulgaris etiam in Pennsylvania in ramis quercinis.

*1986. 9. C. palmatum, L. v. S., tractu longitudinali prorumpens ex cortice Rhododendri maximi, Bethl.

C. caespitosum, caespitibus pugilliformibus declinatis. Peritheciis seu Cupulis nigris subcylindricis, quasi ex tuberculo caespitosim orientibus, variis sibi ipsis impositis, apice primum in pseudostiolum abientibus, demum apertiusculis, et quasi poro hemisphaerico concavo minuto excavatis. Intus pulveraceis. 1—2 linearum altitudine.

*1987. 10. C. compressum, L. v. S., ex ramis Betulae carpinifoliae (lentae) propullans, Bethl.

C. transversim erumpens, caespitosum valde elevatum et ramum quasi aculeans. Cupulis semper inflato-compressis, apice valde varieformatis, nigris, furfure cinereo adspersis, apice demum apertiusculis. 2 lineae saepe altis. Furfure externo detergibili—tum fungus nigro-pulverulentus evadit. Etiam ex Nova Anglia communicavit Cl. Torrey.

*1988. 11. C. episphaeria, L. v. S., aliquomodo analogum Hydno aut Radulae aterrimae. Vulgaris in Sphaeria stigmati et S. limaeformis, praesertim non evolutis—Epidermidem valde elevat et ad dejectionem praeparat.

C. difforme, subcylindrico-ventricosum; extus tuberculosum, inaequabile, apice truncato-impresso aut irregulariter aperto; nigro-fuscum, intus subgrumosum. Plerumque observatur in lignis igni destinatis.

*1989. 12. C. Staphyleae, L. v. S., passim occurrit in junioribus ramis Staphylcae, Bethl.

C. sparsim subepidermide, sed gregarium, primum tectum et epidermidem quasi nigricans, minutum, sphaeriaeforme. Demum prorumpens, nigrum, apice aperto irregulari; disco indistincte pulverulento.

*1990. 13. C. confusum, L. v. S., frequens in cortice ramorum Quercus albae in terra jacente Salem et Bethl.

C. sparsum ac confluens, ramos aut juniores truncos pedaliter obtegens. Sub epidermide observatur crusta quadam effusa fusco-nigra, punctulatim subpubens, obsita peritheciis prorumpentibus, irregularibus, difformibus, sphaeriomorphis, conspurcatis extrorsum sporidiis quasi profluentibus. Ceterum perithecia saepe globosa sunt et demum apice aperto, ore aut pezizoideo aut sphaeroideo, aut irregulari.

*1991. 14. C. sphaeriaemorphum, L. v. S., in ramis emollitis Quercus albae Bethl.

C. gregarium, rarius confluens, epidermide innatum aut prorumpens, interdum quasi fasciculatum, plerumque autem forma obovata turbinata, fusconigrum, rugosum, punctatum, non stipitatum. Disco rarius subaperto. Intus ferrugineum—diametro ½ lineari. Ramum agmine vasto, longe lateque diffuso occupat.

2. *Triblidium.*

*1992. 15. C. *caliciiforme*, F. p. 183, n. 11, Salem et Bethl.

*1993. 16. C. *pithyum*, F. n. 13, in frustulo pineo, Salem.

1994. 17. C. Viburni, L. v. S., Syn. Car. 1264, etiam Pennsylv.

1995. 18. C. turgidum, L. v. S., Syn. Car. 1265, Peziza quernea in excrescentiis ramorum Quercus, Sal. et Bethl.

*1996. 19. C. *arcticum*, F. 17, specimina nostra debemus clarissimo D. Kunzio Lipsiensi in foliis Andromedae tetragonae ex Sinu Laurentio.

*1997. 20. C. TUMORUM, L. v. S., in excrescentiis ramorum passim, Bethl.

C. prorumpens, primum tectum, demum epidermide stellatim fisso cinctum; sparsum nec caespitosum, rotundatum, convexum, nigrum, extus squamulosum, primum omnino clausum, demum apertum rimis, aut irregulariter rupto ore.

*1998. 21. C. CRATAEGI, L. v. S., passim occurrit in ramulis Crataegi, Bethl.

C. sparsum, sessile, repando-effusum, subtremelloso-corneum, atrum aut atro-fuscum, primum globosum, demum apertum, nigro-pulveraceum, pulvere compacto; disco semper impresso.

*1999. 22. C. AERUGINOSUM, L. v. S., in ligno udo decorticato aut sub cortice Bethl.

C. crustae quaedam atro aeruginosae lignum obtegenti et tingenti insidens caespitosim aut in lineis flexuosis aggregatum; cupulis minutis applanatis, margine undulato plicato tuberculoso; disco applanato pulverulento. Unicolor atro-aeruginosum; vix semilinea alta.

*2000. 23. C. FIBRISEDA, L. v. S., in lignis denudatis siccis, fibris insidet, primum subtectum. Bethlehem praesertim in Castaneis sepium.

C. minutissimum, fasciculatum et sparsum, etiam passim confluens. Siccum nigerrimum cupulis varie formatis, sed semper conniventibus; extus papillis nigris tam dense obsitum ut fere Exosporium Tiliae refert. Madefactum, discus pallido-rufus, atro-pulverulentus se exhibet.

*2001. 24. C. APERTUM, L. v. S., in ramulis emortuis Hydrangeae Bethl. et Salem.

C. sparsum, simplex, cupulis 1—2 linearibus, primum clausis, pulvinato-rotundis, extus nigro-ferruginosis pulverulentis, demum late apertis, marginibus irregulariter inflexis, saepe ruptis. Disco pallido. Affinis est C. ferruginoso.

*2002. 25. C. ROSAE, L. v. S., prorumpens rarius ex cortice Rosae corymbosae, Bethl.

C. caespitosum, prorumpens, cupulis dense aggregatis, corneis, nigronitentibus, margine tuberculoso, disco plano aperto. Cupulis difformibus. Affine C. Viburni.

*2003. 26. C. POPULINUM, L. v. S., sparsim erumpens ex Populi italicae cortice, Bethl.

C. sparsum; 1—2 lin. latum, elevatum cum epidermide a qua cinctum primum clausum, nigrum; demum apertum, margine effuso, disco cinereo pulverulento. Clausum fuscescit. Faciliter ellabit.

*2004. 27. C. CASTANEAE, L. v. S., ramulis junioribus Castaneae rarius insidet, Bethl.

C. simplex, prorumpens, epidermide cinctum et pulvere quodam spurio ex cortice insidens. Sessile subrepando-undulatum, marginibus tumidulis, centro discoideo irregulariter depresso, rugoso, subpulverulento. Demum ruptum et intus grumosum, fuscum. Extus nigrofuscum. Diametro lineam non excedit.

*2005. 28. C. FATISCENS, L. v. S., in cortice Syringae et evolutius in Moro alba, Bethl.

C. minutum (majus tamen in Syringa) fasciculatum, prorumpens sessile; cupulis globosis primum clausis, interdum difformibus, pulvere copioso tectis, demum omnino fatiscentibus. Pulvere deterso apparent cupulae applanatae atronitentes, demum irregulariter apertae.

*2006. 29. C. NIGROFUSCUM, L. v. S., ingenti copia occupat dejectos ramos ignotos, Bethl.

C. sparsum aut subcaespitosum, gregarium, globosum aut turbinatum, liberum quasi in epidermide, ad 2 lineas latum, undique tuberculosum, et quasi fusco barbatum pube brevi rigido. Disco vix aperto, sed dehiscens in rimis varie tortis. An hujus generis. Fungus distinctissimus.

*2007. 30. C. *pinastri*, F. p. 184, n. 12, in ramis Pini Strobi, Bethl.

*2008. 31. C. MOLLIUSCULUM, L. v. S., eximia species, in Betula carpinifolia Mauch Chunk.

C. pezizoideum, aggregatum ac sparsum, saepe invicem adpressum et inde angulatum. Statu madido molliusculum 1—3 lineas latum, nigro olivaceum marginatum. Sicco statu corneo-ceraceum. Sessile, basi tamen contracta. Cupulam refert marginatam subrepandam lobatam, extus olivaceam, disco convexo rugoso, punctato, nigro. Intus substantia eleganter flavo-ferruginea.

3. *Clithris.*

2009. 32. C. *ferruginosum*, F. n. 18, Syn. Car. 1250, Peziza abietis solummodo in Carolina mihi obvium.

2010. 33. C. CEPHALANTHI, L. v. S., Syn. Car. 1256, F. 21, frequens locis suis etiam Pennsylv.

2011. 34. C. *quercinum*, F. 24, Syn. Car. Hysterium, 248, et. frequens in Pennsylvania.

*2012. 35. C. *acutum*, F. 23, in Sambuco rarius, Bethl.

*2013. 36. C. PYRINUM, L. v. S, longe lateque obtegens frustula corticis Pyri coronariae, Nazareth.

C. cupulis gregariis aut sparsis atrofuscis, nitentibus, plerumque transversim aut varie sitis, semper basin versus in stipitem contractis, more Lophii, siccitate conniventibus, sed etiam late hiascentibus, hysteriiformibus, marginibus inflexis, discum planum atro-pulverulentum exhibentibus. Interdum scutellam Lichenis referens, rotundato-apertum.

*2014. 37. C. ENTEROXANTHUM, L. v. S., parvulum sed distinctissimum in ligno Pomorum, Bethl.

C. longitudinaliter seriatum aut irregulariter prorumpens, sessile, hysteriiforme, subrotundum aut ovatum, plerumque clausum aut rima longitudinaliter apertum. Extus olivaceo rugosum nigrum. Intus colore luteo-virente pulverulentum praesertim sub disco subaperto. Crusta quadam ligno commixto nigra, ex qua prorumpit.

Tribus 3. CLIOSTOMEI.

Genus 64. GLONIUM.

2015. 1. G. *stellatum*, F. 595, Syn. Car. 258, cum Icone frequens, etiam obvium in Pennsylv.

*2016. 2. G. ACCUMULATUM, L. v. S., affine priori, sed vix mera varietas, cum constanter forma sua obvium, Bethl.

G. subiculo byssino parco in ambitu, fibrillulis crassiusculis. Ad basin diametro gaudet unciali, unde irregulariter assurgit in formam subpyramidato-truncatam valde inaequalem et rugosam, ortam ex peritheciis accumulatis, sese invicem superincumbentibus, ramoso-radiantibus, radiis interruptis; intus albo-farctis. Altitudine semiunciali. Colore omnino prioris.

Genus 65. LOPHIUM.

*2017. 1. L. NAVICULARE, L. v. S., in ligno ignoto Bethlehem, mihi obvium.

L. non pedicellatum, sed basi contractum, elongatum, ovatum, subflexuosum, forma naviculari valde simile. Hysterio, praesertim statu juniori, antequam omnino emersum, quia tum utrinque acuminatum et rima omnino Hysterii praeditum. Provectiori aetate compressum evadit, et extus longitudinaliter striatum concham referens, fuscescens, ceterum nigrum et utrinque obtusatum. An merum Hysterium?

*2018. 2. L. SASSAFRAS, L. v. S., passim occurrit in cortice Lauri Sassafras nec alibi in Pennsylv.

L. majusculum, sparsum, affine *mytilino*, sed multo majus et obtusius. Subpedicellatum, sursum turgido-dilatatum, rugosum striatum, absque ullo splendore nigrum. Rima clausa; nucleo albido; interdum bifariam aperta.

Genus 66. ACTIDIUM.

*2019. 1. A. CARICINUM, L. v. S., ad culmos et folia majorum Caricum, Bethlehem rarius.

A. peritheciis applanatis, nigris, stellatim irregulariter radiantibus, lobis oblongis, obtusis, rugosis, primum epidermide tectis, demum denudatis. Actinothysium occurrit in iisdem foliis.

Genus 67. CLIOSTOMUM.

*2020. 1. C. *corrugatum*, F. p. 565, Rhytisma et Syn. Car. 1249, Peziza Hysterium; etiam in lignis exsiccatis sepium Bethlehem.

Tribus 4. Phacidiei.

Genus 68. Rhytisma.

*2021. 1. R. *Andromedae*, F. 5, ex Nova Anglia et Labrador in foliis Andromedae polifoliae.

2022. 2. R. decolorans, L. v. S., Syn. Car. *Xyloma*, 265, F. 6, frequens et Pennsylvaniae in foliis Andromedae paniculatae.

2023. 3. R. Vaccinii, L. v. S., Syn. Car. 265, β, non est mera varietas sed satis distincta. Frequentissimum in foliis Vaccinii frondosi, rarius in aliis nisi etiam V. virgati.

2024. 4. R. Prini, L. v. S., Syn. Car. 268, F. 9, nondum in Pennsylv.

2025. 5. R. Ilicincola, L. v. S., Syn. Car. 269, F. 10, nec Pennsylv.

*2026. 6. R. Ilicis canadensis, L. v. S., frequens in foliis Ilicis canadensis monte Pocono.

R. hypophyllum multo minus priori, angulato-orbiculatum, valde elevatum, atrum sed absque nitore et superficie punctata, centro saepius impressum, folio subinnatum, cinctum margine pallido in folio. Interdum lobatum ambitu. Diametro 1—2 lineari, et plerumque tantidem altum.

2027. 7. R. velatum, L. v. S., Syn. Car. 270, F. 11, solummodo in Carolina obvium.

*2028. 8. R. *salicinum*, F. 12, rarius in foliis Salicum, Bethl.

2029. 9. R. *Robiniae* (Fungum etiam ex Bohemia teneo europacum).

Nunquam in foliis Robiniae pseudo-acaciae inveni, sed passim in foliis *Robiniae viscosae* in Horto Nazareth. Fructificans rarum, sed macula nigra sterilis vulgata.

2030. 10. R. *acerrimum*, F. 14, Syn. Car. 266, etiam frequens in Pennsylv. in folii A. rubri.

*2031. 11. R. *punctatum*, F. 15, (non Xyloma punctatum, Syn. Car. 267—quod ad R. Vaccinii) rarius in A. saccharini foliis Salem et Bethl.

*2032. 12. R Aceris eriocarpae, L. v. S., in juniorum arborum foliis Aceris eriocarpae in Horto Bartramii, Philadelphia.

R. innatum, magnum, atronitens, orbiculato-lobatum, luteo-marginatum, demum in plicis ramoso-undulatis radiantibus dehiscens. Vix mera varietas R. acerini?

2033. 13. R. Asteris, L. v. S., Syn. Car. 271, passim in foliis variorum Asterum Carolinae et Pennsylvaniae. Species quam distincta.

R. innatum exacte orbiculatum, margine latiusculo exalbescente, ambitu lobato, amphigenum, atrum sed expers nitoris, teniusculum, punctulatum: diametro bilineari, primum velo tenuissimo cinereo tectum demum evanescente. Dehiscens non mihi obvium. In planta ubi occurrit plerumque frequenter infestat folia.

*2034. 14. R. Solidaginis, L. v. S., vulgatissimum in foliis vigentibus *Solidaginis lanceolatae* nec alibi Bethl.

R. innatum, aterrimum, absque ullo velo aut nitore, orbiculatum aut ovatum, margine luteo in folio; in pagina superiori convexum, in inferiori concavum; diametro 1—6 linearum. Saepe plura confluunt —sed apertum non vidi.

*2035. 15. R. difrons, L. v. S., rarum in folio *Solidaginis sempervirentis*, mihi ex New York communicatae a clarissimo D. Torrey.

R. innatum, amphigenum, orbiculatum, gregarium aut subconfluens, convexum in ambabus paginis et satis crassum, margine in folio exalbescente. Sursum indutum cortice aut velo crassiore fusco-grisea exteriori, demum frustulis soluto, cortice interiori atra, intus carbonaceum. Diametro trilineari. Interdum perforatum invenitur, an casu?—ceterum inapertum.

N. B. Tres species antecedentes memorabiles inter se affines sunt.

*2036. 16. R. Sassafras, L. v. S., rarius in foliis Sassafras Carolinae, affinis R. *decoloranti*.

R. innatum, minus, epiphyllum, orbiculatum, 1 lineare, pagina inferiori, glauco-subvelatum, aequabile; in superiori nigro-nitens, flexuoso-plicatum, plicis demum rimose hiantibus.

*2037. 17. R. Vitis, L. v. S., rarius in foliis putridis (nec in vigentibus observatum) Vitis aestivalis Carolinae ac Pennsylv.

R. innatum, minutum (1—2 lineari diametro) orbiculatum—aut subquadratum, atrum; pagina superiori

demum dehiscens plicis flexuosis irregularibus; pagina inferiori subcinerascens, aut cum folio pruinosum; aequabile sed tamen punctulatum.

*2038. 18. R. Juglandis, L. v. S., olim Nobis *Sphaeria* placentula, passim in foliis emortuis equidem corruptissimis Juglandis tomentosae et albae, Bethl.

R. minutum punctiforme, quasi placentulam orbiculatam referens, applanatam, in aversa pagina folii; nigram, plicis radiantibus flexuosis, demum dehiscentibus. Multis aggregatis plerumque sed non inter se confluentibus.

*2039. 19. R. Magnoliae, L. v. S., in foliis dejectis adhuc viridibus Magnoliae glaucae prope Philadelphia.

R. paginae superiori folii insidens, maculis subeffiguratis, ¼ uncialibus nigro-fuscis, ambitu orbiculato minus obscuro. Demum frustulatim dehiscens. Cortice tenuissimo. Folium in ambitu plerumque exarido. Pagina aversa glaucescit fungus.

*2040. 20. R. Cacti, L. v. S., in foliis Cacti opuntiae passim: Salem. Plerumque corruptis.

R. innato-subtectum, demum erumpens, atroniteus, varium, difforme, satis elevatum, superficie irregulariter flexuoso-plicata, plicis dehiscentibus. Pluribus aggregatis confluentibus.

*2041. 21. R. seriale, L. v. S., rarissime obvium, in vetusto Scopo ex ligno Hickory, Bethl.

R. seriatim confluens, lineolis atronitentibus ex numerosis aggregatis peritheciis, varie formatis et flexuosis, rimis demum dehiscentibus. Peritheciis minutis.

2042. 22. R. confluens, L. v. S., Syn Car. 260, F. 19, et Pennsylv. frequens in caulibus, praesertim Eupatorii maculatae, &c.

2043. 23. R. Smilacis, L. v. S., Syn. Car. 259, F. 18, frequens etiam in Smilacibus Pennsylv. An idem cum Dichaena smilacina?

*2044. 24. R. elevatum, L. v. S., affinis R. confluenti in caulibus an Urticae, Bethl.

R. minus, confluens, multo magis elevatum quam No. 22, atronitens, irregulariter demum ruptum. Colore atro. Copia magna quasi aggregatum in maculas indeterminatim effusis.

*2045. 25. R. Silphii, L. v. S., in caulibus Silphii culti in Horto, Nazareth frequens.

R. innatum, efficiens maculas minores ellipticas aut ovatas, utrinque acuminatas, etiam interdum orbiculares, atronitentes, conflatas ex peritheciis effiguratim confluentibus, in ambitu simplicibus; superficie aequabili, primum striata, demum tuberculosa, hinc inde rimose dehiscente.

*2046. 26. R. agglutinatum, L. v. S, aut R *maximum*, F. 3. Species valde memorabilis, de qua diu dubiosus fui, an hujus generis aut *Phlebia*. Semper in ramis Salicum indigenarum v. c. S. *lucidae*, *marginatae* et *talium* in ripis crescentium, saepe plures connectens, et inter se conglutinans. Juxta Lehigh demum omnibus statubus inventum magna copia—certus factus sum *Rhytisma* ante oculos habere et non multum abest ut persuasum sim esse R. *maximum* Fries.

R. irregulariter effusum, nigrofuscum, induratum, rimosum, plicis transversis rugosis. Arctissime ramis adhaerens, crassiusculam membranam, coriaceo-viscosam exhibens. Marginibus siccitate solutis involutis, ceterum innatum et a ligno non separabile. Intus albido.

Genus 69. Phacidium.

* *Erumpentia.*

*2047. 1. P. *alneum*, F. p. 573, n. 4, in ramis Alni, Bethl.

*2048. 2. P. *lacerum*, F. 12, in foliis Pini inopis, Philad.

*2049. 3. P. *abietinum*, F. 13, in foliis Pini Strobi, Nazareth.

2050. 4. P. *multivalve*, F. 14, in foliis Ilicis opacae. Salem. Erumpens, ovato-subrotundum, diametro 1 lineari, simplex sparsum, atronitens, valde convexo-elevatum, in laciuias 4—5 ruptum, disco fuscescente.

*2051. 5. P. Rhododendri, L. v. S., in pagina superiori Rhod. maximi foliorum, Bethl.

P. in macula lata expansa albescente innatum, peritheciis nigrofuscescentibus, majoribus, bilinearibus aut ultra, sparsis, obtuso-oblongis, subflexuosis, demum in lacinias tres, irregulariter ruptis. Disco fuscescente subpulverulento.

*2052. 6. P exasperans, L. v. S., frequentissimum in utraque pagina foliorum emortuorum Kalmiae latifoliae, Bethl. et Salem.

P. erumpens, demum libere folio insidens, minutum, sparsum, sed tamen tam copiose ut folium tactu exasperat, subrotundum, applanatum, truncatum, aterrimum absque nitore, undique punctulato-asperum. Demum in paucas lacinias ruptum: disco indistincto.

*2053. 7. P. CORTICALE, L. v. S., affine P. alneo, sed multo majus ½ unciale et ultra nec rhomboideum—in ramis exsiccatis Rhododendri, Bethl.

P. erumpens, atrum, rugosum, elliptico-ovatum marginatum, maximum, plano-depressum, epidermide lacerato cinctum. Demum irregulariter in lacinias fissum, strato discoideo fuscescenti—in exsoletis subfatiscente.

*2054. 8. P. CAULINCOLA, L. v. S., in variis caulibus majoribus v. c. Eupatorii, Bethl.

P. erumpens aut potius subinnatum, exacte orbiculare, depresso-planum, atronitens, sparsum, multis tamen gregariis. Diametro semilineari. Superficie primum plicata, demum in lacinias paucas dehiscente.

*2055. 9. P. CAPSULARE, L. v. S., frequens in Capsulis emortuis Verbasci Thaps. Bethl.

P. primum innatum, hemisphaericum, punctiforme, fuscum, subpellucidum, minutissimum, demum adnatum, atrum, orbiculare, depressum, corrugatum, in plures lacinias ruptum.

*2056. 10. P. GLANDICOLA, L. v. S., rarius obvium in glandibus quercinis, Bethl.

P. erumpens, atronitens, minutum, sparsum, ovato-obtusum, centro fere ut Hysterium assurgens, sed in plures lacinias dehiscens, disco dilute fuscescente, $\frac{1}{3}$ lin. diametro.

** *Xyloma.*

2057. 11. P. *coronatum*, F. 16, Syn. Car. 281, et in Pennsylv.

*2058. 12. P. *dentatum*, F. 17, in foliis quercinis, Bethl.

*2059. 13. P. FRAXINEUM, L. v. S., in foliis F. acuminatae rarum, sed copiose aggregatum Bethl.

P. innatum, majus priori, absque macula in pagina aversa, gregatim sparsum, subrotundum aut difforme, atrum absque nitore, convexo-applanatum; superficie plicato-rugosa, demum irregulariter fissa in lacinias. An ad P. fimbriatum? Sistens puncta nigra conspicua in epidermide cinerascente folii.

*2060. 14. P. PLATANI, L. v. S., frequens in aversa pagina folii Platani occident. Bethl.

P. innatum, minutissimum, creberrime sparsum, atronitens, punctiforme, sed pro ratione valde elevatum, ovale aut difforme. Superficie primum notato plicis tribus elevatis, demum fissa in lacinias tres. Disco pallido.

*2061. 15. P. QUERCINUM, L. v. S., in aversa pagina foliorum Quercinorum rarum, Bethl.

P. minutum, nudo oculo punctiforme nigrum aut fuligineum. Lente admota omnino difforme, varie lobatum, subelevatum, applanatum, absque nitore, demum dehiscens laciniis irregularibus.

Genus 70. HYSTERIUM.

* *Denudata.*

2062. 1. H. *pulicare*, F. p. 579, n. 1, Syn. Car. 237, vulgatissimum in corticibus et lignis Carolinae et Pennsylv. Varietates insignes occurrunt.

α *angustatum* non rarum.

β *lenticulare* in Querco, Bethl.

γ *juglandis*, Syn. Car. 242, frequens et Pennsylv.

δ *laeve* vulgatum Pennsylv.

*2063. 2. H. *elongatum*, F. 3, rarius, Salem et Bethl.

*2064. 3. H. *graphicum*, F. 4, in cortice Sassafras, Bethl.

2065. 4. H. TORTILE, L. v. S., Syn. Car. 250, F. 5, etiam Bethl.

*2066. 5. H. *varium*, F. 7, rarissime in Querco, Bethl.

2067. 6. H. CASTANEAE, L. v. S., Syn. Car. 247, F. 8, passim praesertim in frustulis ligni caesi etiam Bethl.

*2068. 7. H. *acuminatum*, F. 9, ad ligna vetusta Sassafras, Bethl.

2069. 8. H. *lineare*, F. 10, passim et Pennsylv. Syn. Car. 240.

*2070. 9. H. *aggregatum*, F. 11, in denudatis lignis, Bethl.

*2071. 10. H. *ellipticum*, F. 12, rarius ad cortices Sal. et Bethl.

*2072. 11. H. VULVATUM, L. v. S., ex New York accepi lignis denudatis ramorum.

H. majusculum, sparsum, ovato-ellipticum, atrum, suberumpens, vulvaeforme vix striatum. Labiis acutis subinflexis ; disco lineat. Maximam affinitatem habet cum H. pulicari; at differt magnitudine, locatione, nempe rariter sparsum in ligno, circumcirca cinerascente.

*2073. 12. H. SYRINGAE, L. v. S., in truncis putrescentibus Syringae, Bethl.

H. primum libro subimmersum, sparsum; demum denudatum aggregatum et saepe crusta nigra circumdatum, ovato-ellipticum, acuminatum aut obtusum, aut varium, atrum, rugosum, apice subtruncatum. Labiis acutiusculis non striatis. Disco lineolata.

*2074. 13. H. PRAELONGUM, L. v. S., passim in ligno carioso Carolinae ac Pennsylv.

H. longissimum, rectum aut paululum tantum flexuosum inter fissuras fibrarum, longitudinaliter et parallelitor seriatum. Labiis inflexis modice dehiscentibus. Provenit gregatim et appressim lineis parallelis. Singulum perithecium angustum ad sex lineas longum.

*2075. 14. H. RETULIGNUM, L. v. S., frequens in cortice antiquo frustulato Betulae, Salem et Bethl.

H. varie flexuosum et contortum, compresso-teres, nigrum. Peritheciis in subiculo quodam crustuoso-floccoso, majusculis, situ mire variantibus. Labiis tumidulis, obtusis, substriatis.

*2076. 15. H. CINERASCENS, L. v. S., rarius in putridissimis lignis Juglandis cinereae, Bethl.

H. gregarium, elongato-flexuosum, aterrimum, subnitens, quanquam superficie punctulata. Ligno cinerascente circumdatum, hinc cinerascens. Peritheciis dense aggregatis elongatis, labiis tenuibus, saepe frustulatim ruptis valde dehiscentibus.

*2077. 16. H. TERES, L. v. S., rarissime in vetustis lignis Rhododendri, Carolina et Pennsylv.

H. crustae quaedam aeruginoso-fuligineae insidens. Peritheciis teretibus, longitudine lineam excedentibus, elevatis, subflexuosis, utrinque abbreviatim acutis, nigris, glabris nec nitentibus. Labiis subinflexis apertis.

*2078. 17. H. INSIDENS, L. v. S., rarius in lignis induratis solummodo Salem obvium.

H. insidens crustae longe effusae nigrae. Peritheciis brevibus, sparsis, crassis, oblongo-ovatis, subtruncatis, plerumque versus basin in pseudostipitem contractis, utrinque obtusis, nigris. Labiis hiantibus inflexis.

*2079. 18. H. *rugulosum*, L. v. S., in frustulis dejectis ligni salicini, Bethl.

H. peritheciis minoribus rotundis aut difformibus, nigris, plerumque convexis, extus valde rugulosis in maculam aggregatis, aut sparsis, longitudinaliter dehiscentibus, rima centrali, interdum abbreviata et manifestim labiata.

*2080. 19. H. NUCICOLA, L. v. S., in nucibus putridissimis Juglandis amarae, Bethl.

H. crustae nigricanti insidens. Peritheciis ex ovato-hemisphaericis valde convexis, rima subimpressa, acuta clausa, ceterum glabris, ex fusco-nigris, acervatim sitis ex omni positione, transversa, parallela et mixta. Crusta videtur orta ex ascis profluentibus.

** *Erumpentia.*

2081. 20. H. RUFESCENS, L. v. S., Syn. Car. 252, F. n. 13, Vulgatissimum in discis caesorum arborum, et in cavitatibus udis succo repletis, praesertim Quercuum et Castancarum, interdum ad ulnarem longitudinem effusum, et Pennsylv.

2082. 21. H. *elatinum*, (crispum) F. 10, Syn. Car. 253, et. Pennsylv.

2083. 22. H. FLEXUOSUM, L. v. S., Syn. Car. 249, F. 18, et. Pennsylv.

*2084. 23. H. *Fraxini*, F. 19, rarius in ramis fraxineis, Bethl.

*2085. 24. H. *conigenum*, F. 20, rarius in Conis Pinorum, ibid.

*2086. 25. H. RIMICOLA, L. v. S., affine H. Ledi, in rimis corticalibus virgultorum emortuorum Diervillae—valde distinctum, Bethl.

H. erumpens, in rimis situm, vix unquam omnino denudatum, angustum, lineare, confluens lineatim longis seriebus. Peritheciis medio dilatatis, labiis tumidulis apertis; aetate irregulariter ruptis, subflexuosis, utrinque acuminatis, nigris, disco pallente. Junioribus peritheciis saepe sphaeriaeformibus.

*2087. 26. H. MORI, L. v. S., passim lignis cariosis Mori increscit Bethl.

H. erumpens, atrum, ovato-acuminatum, convexum. Peritheciis aggregatis, labiis tenuibus. Disco cinerascenti.

*2088. 27. H. VACCINII, L. v. S., in ramis exsoletis Vaccinii frondosi, Bethl.

H. erumpens, magnum, elongatum, ovatum, fusco-atrum, multo majus H. Ledi, cui affine. Labiis tenuibus, disco rufescente. Cortice cinctum erumpit.

*2089. 28. H. AZALEAE, L. v. S., etiam priori et H. rimicolae affine. In cortice Azaleae nudiflorae, Bethl.

H. primum epidermide fere tectum, inde intumescente, quacum assurgit, rima aperta, satis magnum, seriatim ac paralleliter confluens, peritheciis 1—2 lineas imo interdum semiunciam longitudine aequantibus. Ex cortice tumido formantur pseudolabia obtegentia vera tenuia aperta, subrufescentia nigra, discum latiusculum monstrantia, fere nunquam denudata, nisi fungo destructo. Epidermide demum dejecta, peritheciorum rudera ex ipso ligno erumpentiorum, flexuosorum, margine tumido—in conspectum veniunt.

*2090. 29. H. Andromedae, L. v. S., passim in cortice juniorum ramorum emortuorum Andromedae axillaris, Salem Carolinae.

H. erumpens, primum epidermide tectum, nigro-circumscriptum, epidermide cum perithecio elevata, subpellucente, demum nigra. Peritheciis nigris ovatis, subrotundis et orbiculatis, sparsis aut confluentibus. Labiis hiantibus, disco nigro. Solummodo sub epidermide aut in illa occurrit, nunquam in ligno ipso. Interdum difforme.

*2091. 30. H. Kalmiae, L. v. S., in lignis subcariosis Kalmiae erumpens ex fibris subsolutis ac ab his tectum, Salem.

H. fibris immersum, demum longitudinaliter erumpens; Peritheciis longissimis, linearibus, rectis utrinque acuminatis, confluentibus, aterrimis. Labiis tenuibus, subturgidis, hiantibus, rima latiuscula.

*2092. 31. H. Rhois, L. v. S., rarius in ligno carioso Rhois typhinae, Bethl.

H. sparsum, breve, ovatum aut subrotundum, convexo-globosum, nigrum, non nitens, glabrum. Labiis distantibus, rima latiuscula aperta. Inter fibras ligni subimmersum, minutum, puncta nigra nudo oculo tantum repraesentans.

*2093. 32. H. Verbasci, L. v. S., frequens in exoletis caulibus V. Thapsi, Bethl.

H. regulare, erumpens, sparsum, nullimodo confluens aterrimum, abbreviato-oblongum, utrinque acuminatum extus rugoso-punctatum. Labiis satis distantibus. Disco nigro.

*2094. 33. H. abbreviatum, L. v. S., in ligno antiquissimo Rhododendri, Bethl.

H. erumpens ex fibris subsolutis cinerascentibus, punctiforme et abbreviatum. Perithecio semilineari, subacuminato glabro, arcte clauso, valde elevato, nigrescente, spargente ascos frequentes.

*2095. 34. H. fibritectum, L. v. S., in lignis antiquissimis salicinis, Bethl.

H. erumpens, gregarium, plagas unciales inter fibros semisolutos occupans. Peritheciis semilinearibus, atris, late ovatis, utrinque abrupte acuminatis, plerumque apice applanatiusculis, lateribus convexis; rima lata marginata, primum clausa.

*** *Subtecta.*

2096. 35. H. Smilacis, L. v. S., Syn. Car. 241, F. 21, et. Pennsylv.

*2097. 36. H. Griseum, L. v. S., vulgatissimum sub epidermide ramorum juniorum Smilacium frigore enecatorum, Bethl.

H. primum omnino tectum epidermide, per quam subtranslucentem perspicitur et inde colorem griseum induit, quanquam Perithecia matura nigro-nitent. Ceterum perithecia sunt ovata orbiculata aut varia, minuta, multa aggregata, semper obtusa. Demum rima longitudinaliter dehiscente, disco nigrofusco.

*2098. 37. H. *Sambuci*, F. n. 24, frequens in S. canadensi, Bethl.

2099. 38. H. *Rubi*, F. 25, Syn. Car. 246, et. Pennsylv. frequens.

2100. 39. H. *Pinastri*, F. 26, Syn. Car. 256, frequens et Pennsylv.

*2101. 40. H. confluens, L. v. S., in stipitibus Ruborum Bethl. non rarum; satis affine H. Rubi sed forma et indole diversum.

H. subinnato-tectum, sparsum in macula expallente epidermidis. Peritheciis polymorphis, ovatis, subrotundis, aut difformibus, saepe confluentibus, situ variantibus, nigris, majoribus minoribus intermixtis, ultimis plerumque orbiculatis. Labiis medio assurgentibus, rima acutim apertis, utrinque quasi sulcatis sub rima. Absque nitore.

2102. 41. H. librincola, L. v. S., in exsoletis caulibus Asclepiadis syriacae, epidermide orbatis, Bethl.

H. subtecto innatum ipso libro caulis, minutum sparsum, nigrum, subrugosum, $\frac{1}{3}$ lineae longum convexum oblongo-ovatum, utrinque obtusum. Demum rima satis hians. Merum punctum offert nudo oculo, in fibris elevatiusculis situm aut potius illis innatum.

**** *Xyloma.*

*2103. 42. H. *commune*, F. 33, in stipitibus, Bethl.

2104. 43. H. PLANTARUM, L. v. S., Syn. Car. 255, F. 34, etiam in Pennsylv. in exsoletis Montropis.

*2105. 44. H. *tumidum*, F. 40 β trigonum, in foliis Quercinis, Bethl.

*2106. 45. H. EXPALLENS, L. v. S., affine H. communi—in stipitibus Syngenesiae plantarum majorum (Asterum, &c.), Bethl.

H. maculis pallide rufescentibus aut exalbescentibus late effusis in caulibus, innatum. Peritheciis sparsis, majoribus, atris ovatis, margine aut ambitu quasi Leptostromatoideo, centro elevato, rima lineari centrali aperto. His majoribus intermixta minora fusca punctiformia.

*2107. 46. H. *typhinum*, F. 36, frequens in Typha, Bethl.

*2108. 47. H. *gramineum*, F. 39, in foliis graminum ibid.

2109. 48. H. *foliicolum*, F. 43, Syn. Car. Xyloma hysterioides, 283. Solummodo obvium in fol. A. axillaris, Salem.

*2110. 49. H. *punctiforme*, F. 46, in nervis foliorum Quercinorum. Saepe in consortio sequentis, Bethl.

*2111. 50. H. *petiolare*, F. 47, frequens in petiolis, Bethl.

*2112. 51. H. *Samarae*, F. 48, frequens in Samaris fraxineis, Bethl.

*2113. 52. H. OSMUNDAE, L. v. S., in stipitibus Osmundae spectabilis, Salem et Bethl.

H. minutum, lineare, elongatum, atrum, interdum confluens, erumpens, elevatum, labiis valde hiantibus, utrinque acuminatum; refert lineolas nigras subpunctiformes.

*2114. 53. H. PTERIDIS, L. v. S., rarissime in stipitibus Pteridis aquilinae, Bethl.

H. multo majus praecedenti, et ad priorem sectionem spectans; primum nigrofuscum, demum nigrum. Peritheciis ovatis, acuminatis, applanatis, substriatis, sparsis, interdum linearibus, sed saepe latiusculis. Rima longitudinaliter aperta.

*2115. 54. H. POLYGONATI, L. v. S., an *Latrella?* caules Polygonati latifolii, longe lateque occupans.

H. sparsum aut confluens, eleganter nigro-punctans caules. Peritheciis atronitentibus, oblongo-ovatis, obtusis. Rima centrali elevata: demum hiante.

2116. 55. H. RHODODENDRI, L. v. S., affinis H. tumido, in foliis Rhododendri Bethl. Vereor nisi idem cum Phacidio Rhododendri?

H. in macula expallente effigurata orbiculata situm; majusculum, bilineare, sparsum saepe transversim, valde elevatum, ovale, tumidulum, ex sordide viridi-nigrum. Interdum trifariam dehiscens, labiis semper quasi undulatis.

Genus 71. EXCIPULA.

*2117. 1. E. *turgida*, F. p. 190, n. 25, ad ramos rara, Bethl.

*2118. 2. E. *Rubi*, F. n. 96, frequens Bethl. in Rubis.

*2119. 3 E. *Strobi*, F. n. 28, in conis Pini Strobi, Bethl.

2120. 4. E. LILIORUM, L. v. S., Syn. Car. Xyloma, 261, F. p. 597, et. Bethl.

*2121. 5. E. EPIDERMIDIS, L. v. S. rarior in epidermide secedenti Spiraeae opulifoliae, Bethl.

E. innato-erumpens, demum libera. Cupulis minutis sparsis, extus nigris, rugosis, margine sublacerato, orbiculato-subrotundo. Disco subaperto, luteo-pallido. Minuta.

*2122. 6. E. RUMICINCOLA, L. v. S., in emortuis caulibus R. verticillati, Bethl.

E. epidermide plerumque tecta, imposita fibrillulis radiantibus, oblonga, utrinque acuminata, nigra. Centro ore elevato aperto rotundo aut orbiculato.

*2123. 7. E. MAJUSCULA, L. v. S., in caulibus dejectis Collinsoniae, affinis priori, Bethl.

E. epidermide tecta, insidens fibrillulis indistinctis repentibus vix radiantibus, 2 lineas longa, ovato-acuminata, confluens, nigra. In centro depressa, demum ore rotundo aperta.

*2124. 8. E. GLANDICOLA, L. v. S., rarior occurrit ad basin glandium putrescentium, Bethl.

E. nuda, superficialiter adnata, orbiculata, aggregata et interdum confluens. Peritheciis singulis applanatis in ambitu manifestim marginatis, atronitentibus plicatis. Ore centrali subelevato pezizoideo-aperto rotundo.

*2125. 9. E. VITICOLA, L. v. S., rarior in foliis Vitis aestivalis, pagina aversa, Bethl.

E. minutissima, punctiformis, sparsa, aterrima, demum fere omnino aperta, disco candido.

*2126. 10. E. ULMICOLA, L. v. S., rarior in foliis dejectis Ulmi fulvae, Bethl.
E. in pagina superiori efficit maculas indeterminatas late expansas, in ambitu subeffiguratas, cinerascentes, fusco-marginatas, margine fusco lato. His copiose immersa sunt perithecia, excipuloidea, punctiformia, nigra, centro depresso et quasi cinerascente. An Sphaeria Depazea?
*2127. 11. E. NITIDULA, L. v. S., in ligno Liriodendri tulipiferae aetate cinerascenti denudato, Bethl.
E. sparsa, minuta, superficialis. Cupulis aut perithecciis subglobosis, nigris, glabriusculis, extus nitidulis. Disco concavo exalbido non turgido.

ORDO III. CYTISPOREI.

Genus 72. ZYTHIA. Fries. Sys. Veg. p. 118.

2128. 1. Z. *subulata*, F. (Sphaeronema 1), Syn. Car. Sphaeria, 232, in fungis agaricoideis et Bethl. passim.
*2129. 2. Z. *rufa*, F. (Sphaeronema 2), elegantissima in ligno Lauri aestivalis emortuo duro, Bethl.
*2130. 3. Z. COMPRESSA, L. v. S., in Polyporo frondoso rara sed optime distincta a Z. subulata cui affinis, Bethl.
Z. sparsa et gregaria. Perithecciis parabolice-conicis subcompressis, spadiceis, subdiaphanis. Globulo spermatico candido, demum penicillatim tecto ascis evolutis. Magnitudine Z. subulatae.

Genus 73. SPHAERONEMA.

*2131. 1. S. *aciculare*, F. n. 3, Salem et Bethl. rarum.
2132. 2. S. *acrospermum*, F. 4, Syn. Car. 228, nondum in Pennsylv.
*2133. 3. S. *ventricosum*, F. 5, in cortice Castaneo Bethl. et Salem.
*2134. 4. S. *cladoniscus*, F. 6, in Rhododendro, Bethl.
*2135. 5. S. *affine*, F. 7 b, vix mera varietas proximi, Bethl.
2136. 6. S. *cylindricum*, F. 7 a, Syn. Car. 229, in ramulis et Bethl.
*2137. 7. S. *parabolicum*, F. 8, in libro corticis Castan. Bethl.
2138. 8. S. *conicum*, F. 9, Syn. Car. 231, nondum Pennsylv.
*2139. 9. S. *pyriforme*, F. 10, sub cortice Pyri, Bethl. in libro.
2140. 10. S. *hemisphaericum*, F. 13, Syn. Car. 230, et. Bethl.
*2141. 11. S. RHODODENDRI, L. v. S., in ligno deorbato Rhododendri, Bethl.
S. perithecciis sparsis, complanatis, subinnatis, ovatis striatis, nigris. Globulo albo deciduo, tum quasi perforata apparent perithecia, ceterum minuta.
*2142. 12. S. CATALPAE, L. v. S., in aversa pagina decedentis Corticis Catalpae ex libro pullulans, Bethl.
S. perithecciis subcylindricis, gracilibus, basi bulboso-incrassato, nigris. Globulo spermatico deciduo albo, relinquente fovcolum excavatum album in ore perithecii.
*2143. 13. S. CAULINCOLA, L. v. S.
S. perithecciis aggregatis, subdifformibus aut Sphaeriaemorphis, nigris, rugosis, subcompressis—coronatis globulo nigro. Intus albofarctis. Prorumpens ex caulibus vetustis ignotis, Bethl.

Genus 74. CYTISPORA.

2144. 1. C. *chrysosperma*, F. p. 542, n. 4, Syn. Car. 291, Naemasp. frequens in Betulis variis, Salem et Bethl.
*2145. 2. C. *carphosperma*, F. 6, ad corticem Mali, Bethl.
*2146. 3. C. *xanthosperma*, F. 5, in ramis salicinis, Bethl.
*2147. 4. C. *fugax*, F. 9, in salicinis ramis, ibid.

*2148. 5. C. *hyalosperma*, F. 15, ramis Carolinae passim.
*2149. 6. C. *carbonacea*, F. 10, in ramis ulmeis, Bethl.
*2150. 7. C. *melasperma*, F. 12, Salem et Bethl. in Betula.
*2151. 8. C. *betulina*, F. 13, etiam Salem et Bethl.
*2152. 9. C. *guttifera*, F. 16, ramulis ignotis, Bethl.
*2153. 10. C. *globifera*, F. 17, elegans in Spiraeae opulifol. ibid.
*2154. 11. C. *rhuina*, F. 18, frequens in emortuis ramis variorum Rhoidum, Bethl.
*2155. 12. C. *Rosae*, Greville Scot. Crypt. frequens in ramis Rosae corymbosae, Hope, New Jersey.
*2156. 13. C. Persicae, L. v. S., frequentissima in junioribus ramulis Persicarum Salem et Bethl.
C. tuberculo tecto, demum prorumpente, orbiculari, minuto, sparso, nigro. Ore albescente, cirrhulo deciduo, albido. Intus celluloso-grumosa albescens.
*2157. 14. C. Robiniae, L. v. S., vix C. coccinea F., nam cirrhulus omnino aliter coloratus. Non rara in ramulis Robiniae.
C. tuberculis majusculis, fusco-badiis, quadrato-elevatis ex epidermide prorumpentibus stellatim fisso; multis aggregatis cingentibus ramulos, apice subostiolato irregulariter depresso. Intus nigrescit. Cirrhis pallidis.
*2158. 15. C. Ceanothi, L. v. S., frequens in virgultis emortuis Ceanothi, Bethl.
C. conceptaculo nullo. Cellulis fuligineis circinantibus in massa corticali, formante tuberculum ovatum, subelevatum sub epidermide. Disco in centro inaequabili, cirrho sordide albo deciduo. Gelatina in cellulis cornea indurata. Minutissima, vix semilineari diametro sed frequentissime prorumpens ex corticis rimis.
*2159. 16. C. difformis, L. v. S., in maximis ramis quercinis ad ignem destinatis, Bethl.
C. magna; cellulis in conceptaculo indistincto incusis, tam irregulari et saepe obliterato ut cellulae luteae gyrosae, materie nigra indurata repletae, quasi in corticali substantia nidulare videntur, tamen nigro-circumscriptae. Ostiolis confusis crassis, emittentibus cirrhos rudes, majores incarnato rubescentes, demum corneos, demum omnino tectos pulvere albo-filamentoso. Prorumpit ex rimis corticis et facile maxima species generis.
*2160. 17. C. quercina, L. v. S., affinis C. chrysospermae in lignis ad ignem praeparatis, Bethl.
C. cellulis in conceptaculo incusis conico-irregulari nec tam efformato quam in C. chrysosperma. Ostiolis pluribus difformibus crassis. Cirrhis lutescentibus mediocris ex ostiolis.
*2161. 18. C. Rubi, L. v. S., in junioribus ramis R. Idaei hortorum frigore enecati, Bethl.
C. tuberculis in macula aggregatis longe lateque effusa lactea, immersis, nigris, regulariter ovatis, applanatis, subcellulosis, intus albidis, elevatis in collum centrale, ex quo protruduntur cirrhi crassi difformes, decumbentes ex albo-lutescentes. Fila Dothidinea interdum tuberculum cingunt—an aliena?

Genus 75. Ceuthospora.

*2162. 1. C. *phaeocomes*, Sphaeria capillata Greville nec Neesii—F. Syst. Veg. p. 120, Sphaeria p. II. 448.
Species distinctissima in culmis secalinis, Bethl.

Genus 76. Phoma.

*2163. 1. P. *salicina*, F. 546, n. 1. Rara Easton in Salicinis fol.
*2164. 2. P. *populi*, F. n. 2; frequens in foliis P. moniliformi dejectis, Bethl.
2165. 3. P. *pustula*, F. n. 4, Syn. Car. Sphaeria, 224, et passim in foliis Juglandinis, Bethl.
*2166. 4. P. Calycanthi, L. v. S., frequens in foliis jam semi-emortuis Calycanthi.
P. multilocularis—subrotunda, plana, confluens, fusca, epidermidi innata, tecta. Ostiolis indistinctis sparsis. Rarissime aperta. Satis magna, bilinearis. Folia maculat.
*2167. 5. P. tulipiferae, L. v. S., rarius occurrit in foliis Liriodendri pagina inferiori—sed ubi adest, copiosa, Bethl.

P. pustula applanata, pluribus confluentibus, nigro-fuscis majusculis, satis elevatis. Ostiolis indistincte formatis. Intus priori affinis.

*2168. 6. P. Andromedae, L. v. S., rarius in foliis dejectis A. axillaris, Salem. Paginam aversam infestat.

P. subtecta, entophylla, epidermide circumcirca cinerascente formatur macula indeterminatim effusa, in qua perithecia irregulariter sparsa aut aggregata sunt, difformia, nigra, ovato-applanata, multilocularia. Epidermide demum rupta, ora peritheciorum irregularia prominent. Magnitudine peritheciorum variante vix unquam lineam et dimidiam excedit.

*2169. 7. P. prunicola, L. v. S., passim sed rarior in foliis Pruni virginianae aut serotinae dejectis, Bethl.

P. entophylla; epidermide cinerascente formante maculas latas irregulariter effusas in folio. Demum rupta, peritheeia in conspectum veniunt ovata, rotunda aut quadrato-difformia, nigro-fusca, ore rotundo primum pertusa, demum latius aperta, et forma oris irregulari—stromate interno manifesto grumoso-fuscescente.

*2170. 8. P. culmicola, L. v. S., eximia species, in culmis Andropogi scoparii, Bethl.

P. sparsa, eleganter erumpens, globosa, aut elliptico-elevata fere semilineam alta, extus atra, rugosa, convexa. Ore majusculo, albocincto, aperto; disco pallide flavo excavato; massa interna grumosa. Juniori aetate epidermide tecta.

Ordo IV. XYLOMACEI.

Genus 77. Schizoxylon.

*2171. 1. S. *Persoonii*, F. Syst. Veg. p. 121, in ligno Rhododendri denudato, Bethl.

*2172. 2. S. tuberculatum, L. v. S., in palis ex ligno Robiniae factis non rarum Bethl.

S. sparsum, in tuberculis ligneis valde elevatis, circumcirca cinerascentibus. Peritheciis tuberculis immersis aterrimis, disco rimali demum rotundo aperto. Sporidiis aut ascis majusculis profluentibus. Perithecia ex tuberculis excussa, linquente foveola inania in tuberculo.

Genus 78. Prosthemium.

*2173. 1. P. *betulignum*, Syst. Veg. p. 121, Myc. Hefte I. Kunzei p. 17. Passim obvium in ramis betulinis, Bethl.

Genus 79. Labrella. Fries. Sys. Veg. p. 121, et Suppl.

*2174. 1. L. *scripta*, F. Leptostrome, I, p. 598, in Aceris negund. ramis Nazareth hort.

*2175. 2. L. nitida, L. v. S., rara in caulibus Polygonati, Bethl.

L. maculatim aggregata; peritheciis atronitentibus superficialibus, ovatis, regularibus, e plano-convexis, rima centrali dehiscentibus, nec clausis et sterilibus ut solent Leptostromata.

Genus 80. Actinothyrium.

*2176. 1. A. *graminis*, F. S. M. 597, ad culmos Caricis, Bethl.

*2177. 2. A. Magnoliae, L. v. S., in aversa pagina foliorum Magnoliae glaucae, Philad.

A. plerumque peritheciis concentrice sitis, tamen sparsis punctiformibus e fusco-nigris, nidulantibus in foveolis nervorum in pagina aversa, applanato-convexulis, orbiculato-scutiformibus. Priori satis affine, sed in ambitu fere integrum nec tam radiato-fibrosum.

*2178. 3. A. caulincola, L. v. S., passim occurrit in caulibus, praesertim Eupatorii, Bethl.

A. orbiculatum, satis elevatum, nigro-fuscum, subumbonatum, epidermide tectum, margine radianti fibrilluloso. Peritheciis sparsis sed numerosis, multo majoribus ceteris speciebus.

Genus 81. Leptostroma.

*2179. 1. L. *caricinum*, F. 599, n. 3, in foliis Caricum, Bethl.

*2180. 2. L. *filicinum*, F. 5, in stipitibus Filicum, Bethl.

*2181. 3. L. *vulgare*, F. n. 7, in caulibus Araliae, Rubi, &c., ibid.

2182. 4. L. Actaeae, L. v. S., Syn. Car. Xylom. 264, vulgatissima in caulibus Cimicifugae ramosae (olim Actaea). Differt a L. vulgari, quia semper umbonatum et saepissime stellatim confluens. Atronitet.

*2183. 5. L. *hysterioides*, F. 8, in junioribus stipitibus Bignoniae radicantis frigore enecatis, Bethl.

2184. 6. L. *sphaerioides*, F. n. 8, Syn. Car. *Xyl. nitens*, 262, etiam Bethl. in Vitis stipitibus.

2185. 7. L. scandentium, L. v. S., Syn. Car. Xyloma, 263. Vulgaris et distincta praesertim in sarmentis Glycineos monoicae, &c. etiam Galii aparinis et Bethl.

*2186. 8. L. Donacis, L. v. S., in culmis viridibus et subviridibus Salem cultis Arundinis Donacis.

L. orbiculatum, 1—2 lin. diametro, scutiforme ambitu quasi lobatum, olivaceo-nigrum, applanato-elevatum, centro subumbonatum. Annon Actinothyrium?

*2187. 9. L. fructigena, L. v. S., in ipsa glaberrima epidermide Pomorum, maturorum, praesertim vulgo dictorum Vandeever, Bethl.

L. superficie glabra, punctiforme, peritheciis plerumque concentrice aggregatis, centro depresso—superficie subrugulosa—ceterum nigris.

*2188. 10. L. rhuinum, L. v. S., in petiolis R. glabrae, Bethl.

L. puncta minima, undique sparsa, atra, non nitentia per lentem ovata, subrotunda offert. Primum tectum demum denudatum, centro collapsulo, costa rimaeformis subelevata centrali. Majora elliptico-acuminata perithecia minoribus mixta.

*2189. 11. L. Hyperici, L. v. S., frequens in caulibus Hyperiei perforati, Bethl.

L. minutum, primum tenerrima epidermide tectum: erumpens, demum, ac denudatum, rotundum aut elliptice acuminatum, e fusco-nigrum, absque nitore valde elevatum—subsclerotioideum. Interdum lineare et ramosim confluens.

*2190. 12. L. Aspidiorum, L. v. S., forma et indole differt ab affini L. filicino—non rarum in stipitibus variorum Aspidiorum, Bethl.

L. minutum, subrotundum, confluens, e fusco-nigrum nitens, parum elevatum impressum, rarissime tractu lineari, sed plerumque efliguratim confluens. Interdum simplex et punctiforme.

*2191. 13. L. cereale, L. v. S., frequens in culmis adhuc stantibus post messem, Bethl.

L. primum sub epidermide tectum, qua dejecta, nudum at innatum evadit, nigro-nitens, ellipticum, subelevatum utrinque acuminatum, centro late depresso. Massa quadam alba implet interiorem partem. An sit Sclerotium? Circum perithecia, epidermis tingitur nigro-fusca, efficiens maculas trilineares.

*2192. 14. L. marginatum, L. v. S., in culmis crassioribus Graminum rarius, Bethl.

L. superficiale, oblongo-ovatum, sed longitudinaliter mire modo quasi effiguratum confluens—interdum maculam efficiens semiuncialem, utrinque rotundatam, atram sed non nitentem. Margine manifestim elevato cinctum est perithecium, superficie applanata minutim tuberculosa. Subdetergibile—et ideo non innatum.

*2193. 15. L. piceum, L. v. S., rarum sed distinctissimum, in dejectis stipitibus ignotis, Bethl.

L. crusta quasi nigro-picea, tenuiores caules undique circumdans, subcontinua, subindeterminatum ambitu. Huic insident perithecia ovata, oblonga, et difformiter lobata, margine subelevato, superficie concaviuscula, et rariter in crusta sparsa. Rarius observantur perithecia conformia extra fines crustae.

*2194. 16. L. Zizaniae, L. v. S., in defossis radicibus *Zizaniae*—prope Philad.

L. magnum, piceum, nitens, bullatim effusum.

*2195. 17. L. inundatorum, L. v. S., in culmo caricino magno Philadelphiae in Delaware.

L. efliguratim effusum, atrum, confluens, innatum, applanatum, conflatum ex multis parvis peritheciis.

*2196. 18. L. acerinum, L. v. S., in junioribus ramis Aceris Pennsylvanicae, Mauch Chunk.

L. subrotundum, gregarium, immerso-innatum, ex olivaceo-nigrum, margine atriori; applanatum, rimosum. Affine L. *fructigenae*, et L. Donacis.

Genus 82. Sacidium. Syst. Veget. F. p. 122.

*2197. 1. S. *Chenopodii*, F. Syst. et Kunz. Myc. Hefte II. p. 64.

*2198. 2. S. vegetans, L. v. S., in junioribus virgultis Staphyleae, frigore tactis sed non omnino enecatis, Bethl.

S. peritheciis orbiculatis et difformibus superficialibus nigris, aggregatis sed non confluentibus in maculas: centro subelevato, pseudostiolato. Superficie scutiformi rugosa.

*2199. 3. S. Bignoniae, L. v. S., in ramulis junioribus B. radicantis, frigore enecatis, Bethl.

S. subepidermide tectum, punctiforme, minutissimum atrum—ostiolo prorumpente subelevato. Excussum, linquet foveola pallida cava in epidermide.

Classis Tertia. GASTEROMYCETES.

Ordo I. ANGIOGASTRES.

Tribus 1. Phalloidei.

Genus 83. Phallus.

2200. 1. P. *impudicus*, F. II. p. 280, Syn. Car. 535, in Pennsylv. non nisi Erie County, prope Lake Erie obvius mihi.
2201. 2. P. *indusiatus*, F. 282, n. 1, Syn. Car. 536, non rarus Pennsylv.
*2203. 3. P. *duplicatus*, F. n. 3, rarus, Bethl.
*2204. 4. P. *rubicundus*, F. n. 6, Salem rarissime et New York.

Genus 84. Clathrus.

2205. 1. C. *columnatus*, F. p. 288. In Georgia invenit clarissimus Leconte ac mihi Iconem misit.
2206. 2. C. *cancellatus*, F. p. 288, ibidem inventus ab eodem ac Icone mihi transmissus.

Nota.—Mirum est nec in Carolina septentrionali nec in Pennsylvania unquam Clathrum me invenisse tam diligenter quaesitum. Videntur Soli magis torrenti solummodo gaudere. Interea observandum est me semel invenisse exuvias Fungi, non eruendi ob statum exsoletum, quae speciem ex hoc Tribu at non Phallum manifestim indicaverunt in regione Nazarethana, Pennsylv.

Tribus 2. Tuberacei.

Genus 85. Tuber.

*2207. 1. T. *cibarium*, F. II. p. 289, 1. Muhlb. Catalog. nunquam ipse inveni—sed certior factus sum ante sexaginta annos in vicinitate Nazarethorum ab antiquo venatore germano, caneque suo ad hoc olim educato, non rariter inventum esse.

Genus 86. Rhizopogon.

2208. 1. R. *ulbus*, F. p. 293, n. 1, Syn. Car. 323, nec Pennsylv.
2209. 2. R. *virens*, F. n. 3, Syn. Car. 324, et. Pennsylv.
*2210. 3. R. *aestivus*, F. p. 294, n. 4. In monte Pocono, Pennsylv.

Tribus 3. Nidulariacei.

Genus 87. Nidularia.

* *Cyathus.*

2211. 1. N. *striata*, F. p. 298, Syn. Car. 531, frequens Bethl.

2212. 2. N. *campanulata*, F. n. 2, Syn. Car. 532, et. Bethl.

2213. 3. N. *Crucibulum*, F. n. 4, Syn. Car. 533, frequens et Pennsylv.

*2214. 4. N. *scutellaris*, F. n. 5, rarior ad ligna Bethl.

*2215. 5. N. STERCOREA, L. v. S., passim Hieme in stercore vaccino insuper rupes dejecto inventa, Hope, New Jersey.

N. obconica, subsparsa, extus strigoso-hirsuta, canescens demum denudata brunnea, margine fimbriato. Intus glabra nec plicato-striata, spadiceo-castanea subnitens, in fundo nigricans. Sporangiis atris, glabris, majusculis. Dimidio minor N. striatae cui affinis.

*2216. 6. N. MELANOSPERMA, L. v. S., in pulvere vaporario ad vias emendendas adhibito, Bethl. primo vere.

N. caespitibus densis aggregata, magnitudine N. striatae, obconica, limbo patenti, extus valde strigosa, pallida; margine integro. Intus glaberrima, atro-fusca, nitens. Sporangiis maximis, aterrimis, difformiter lenticularibus, glaberrimis, nitidis. Epiphragmate pallido tenuiusculo.

*2217. 7. N. RUGISPERMA, L. v. S., in quisquiliis dejectis rarior, Bethl.

N. caespitosa aut sparsa, obconico-campanulata limbo vix patente; epiphragmate crasso, plano, albido, floccoso-strigoso. Extus strigosa, pallida aut ochracea. Intus cinereo-splendens, nullimodo plicato-striata, sed glabra. Sporangiis magnis atris, lenticularibus, non nitentibus, sed superficie reticulato-rugosa. Ceterum magnitudine prioris.

*2218. 8. N. FASCICULARIS, L. v. S., ad radices emortuos maximi fruticis Artemisiae Absinthii in Horto, Bethl.

N. fasciculatim crescens in superficie corticis radicalis e basi quadam tomentoso-strigosa, effusa. Cupulis maxime obovatis, limbo repando, subundulato, reflexo; extus badio-strigosis, basi valde contracta, et quasi paralleliter annulatim zonatis; intus glaberrimis nitore argenteo ac fuligineo-zonatis. Sporangiis majusculis argenteo-plumbeis. Juniore aetate cupulae sunt exacte obconicae, interdum numerosae in caespite. Epiphragmate strigoso concolore; antequam rumpitur globoso-convexo aut cacumine subacuto.

*2219. 9. N. JUGLANDICOLA, L. v. S., magna copia prorumpens ex rimis corticis duri Juglandinum, serie longitudinaliter protracta. Affinis et. N. Crucibulo. Bethl. rarior.

N. turbinato-campanulata, arhiza, basi contracta, limbo repando, saepe confluens. Extus ferrugineo-lutescens, subtomentosa, tomento basilari tenui in cortice effuso. Intus glabra, candidissima. Sporangiis crebris, candidissimis. Epiphragmate impresso, firmo, ferrugineo. In majoribus speciminibus cupulae dense fasciculatae.

** *Nidulariae.*

2220. 10. N. PULVINATA, L. v. S., Syn. Car. 534, F. n. 8, solummodo Salem Carolinae.

Genus 88. ARACHNION, L. v. S., F. II. p. 303.

2221. 1. A. ALBUM, L. v. S., Syn. Car. 334, p. 33, nondum in Pennsylv. inventum.

Genus 89. MYRIOCOCCUM.

*2222. 1. M. *praecox*, F. p. 304, rarius Bethl. in truncis vetustissimis.

Genus 90. POLYANGIUM.

*2223. 1. P. *vitellinum*, F. p. 305. Frequens in pulvere vaporario, Bethl. vere.

Tribus 4. Carpoboli.

Genus 91. Atractobolus.

*2224. 1. A. *ubiquitarius*, F. p. 305, in variis foliis udis—nec tamen valde frequens, Bethl.
*2225. 2. A. lutescens, L. v. S., in dejectis foliis betulinis rarius, Bethl.
A. cupulis sessilibus, aureo-lutescentibus, nitentibus, minutissimis, copiosim sparsis, limbo tumido; operculo applanato-convexo, umbonato, subcostato, glabro, concolore.

Genus 92. Thelebolus.

2226. 1. T. *stercoreus*, F. p. 307, n. 2, Syn. Car. 303, nondum in Pennsylv. inveni.

Genus 93. Pilobolus.

2227. 1. P. *crystallinus*, F. p. 308, n. 1, Syn. Car. 304, et valde frequens autumno in stercore, Bethl.
2228. 2. P. *roridus*, F. n. 2, Syn. Car. 305. Rarissime obvius solummodo in Carolina, stercore equino.

Genus 94. Sphaerobolus.

2229. 1. S. *stellatus*, F. p. 309, Syn. Car. 302, et. Pennsylv. freq.
*2230. 2. S. *tubulosus*, F. p. 310, n. 2, passim in Pennsylv. in ramis et ramulis corruptissimis variorum arborum. Fungus distinctissimus.
*2231. 3. S. crustaceus, L. v. S., satis frequens similibus locis, Bethl.
S. crustae candidae, sublichenosae, pulverulentae in ramulis subeffiguratim expansae immersae sunt cupulae globosae majusculae, cum cortice et crusta elevatae, ore contracto aperto, margine albo-pulverulento non stellato, intus post sporangii ejectionem, flavae, glabrae. Sporangio atro primum cylindrico, apice rotundato aut applanato depresso, exsiccato corneo. Multo major S. stellato, nam diametrum bilinearem attigit.
*2232. 4. S. sparsus, L. v. S., in dejectis stipitibus, v. c. Hydrangeae, Stictidem referens, Bethl.
S. sparsus, absque crusta, epidermide subtectus et eacum conico-elevatus. Cupulis plano-concavis, intus pallidis, immersis. Ore rotundo, margine nigro, albo-pulverulento latiusculo. Sporangiis nigris, apice ad instar Pezizulae aut Patellariae depresso—demum ejectis. Diameter cupulae semilinearis.
*2233. 5. S. minutissimus, L. v. S., in fibris subsolutis Corticis dejecti Castaneorum interioris cum aliis minutissimis fungis, Bethl. rarissime.
S. cupulis fere omnino liberis, minutissimis (nudo oculo fere invisibilibus) exacte Pezizam dasyscypham referentibus; extus nempe cinereo-albis; villoso-strigosis, subcylindrico turbinatis, demum emittentibus sporangium globosum, subdiaphanum, cinerascens, cupulam magnitudine aequans. Primum omnino clausum, sed sporangiolo dejecto, supersunt quasi Pezizulae strigoso-pulverulentae, margine irregulariter fisso nec stellato.
*2234. 6. S. Corii, L. v. S., in vetusto corio dejecto et in linteis affixis occurrit rarius—affinis S. stellato, sed minor, Bethl.
S. gregarius, ime immersus corio, tandem post ejectum sporangium fere omnino emergens: primum villo albido velatus. Demum peridio externo in lacinias 3—4 regulares fisso, revoluto stellatim, candido pulverulentus. Tum exacte refert Stictidem radiatam. Sporangio applanato, corrugato, pallido. Peridio externo persistit.

Ordo II. TRICHOSPERMI.

Tribus 1. Sclerodermei.

Genus 95. Elaphomyces. Syst. Fries. Veget. p. 154.

*2235. 1. E. *cervinum*, (Lycoperdon olim) rarissime obvium factum his regionibus Pennsylvaniae, Spr. 520.

Genus 96. Uperrhiza. Bosc. S. F. V. p. 155.

*2236. 2. U. *Boscii*, Nees. Syst. p. 159. Etiam rarissime a me in monte Pocono inventa, Sprengl. p. 416.

Genus 97. Scleroderma.

2237. 1. S. *citrinum*, Sprengel, Syst. II. p. 519, Syn. Car. 346, et Mauch Chunk frequens.
2238. 2. S. *spadiceum*, Pers. Synopsis, satis distinctum a priori, Syn. Car. 347, et Pennsylvania.
*2239. 3. S. *verrucosum*, Sprengel, p. 520, n. 7, in monte Pocono.
2240. 4. S. *Cepa*, Sprengel, 520, n. 8, Syn. Car. 348, non rarum et. in Bethl.
2241. 5. S. *polyrhizon*, Spr. n. 9, Syn. Car. 349, et Pennsylv.
2242. 6. S. lycoperdioides, L. v. S., Syn. Car. 350, Sprengel, n. 5, nondum in Pennsylv. observavi.

Genus 98. Mitremyces.

2243. 1. M. lutescens, L. v. S., Syn. Car. 345, Sprengel, p. 518, rarius occurrit in Pennsylvania quam in Carolina, tamen passim.
*2244. 2. M. *cinnabarinum*, Calostoma, Devaux et Brongniart, Bethl. et New York. Satis affine Mitremyci—sed peridium externum, corneum, coccineo-cinnabarinum, primum omnino clausum, demum deciduum et revolutim fissum in lacinias. Stipite prioris.

Tribus 2. Lycoperdinei.

Genus 99. Actinodermium. Nees. et S. Veg. F. p. 137.

*2245. 1. A. *Sterrebeckii*, Spr. 518, n. 10. Fungus apud nos maximus Bethlehemiis. Plerumque caespitosim crescit, 3—4 individuis radicibus connexis; interdum singulorum Pteridium latitudinem plusquam semipedalem attingit. Nullimodo ad Geastra pertinet et distinctissimus est. Etiam nobis obvium sed rarissime in Carolina. Pennsylvania non rarum.

Genus 100. Geastrum.

* *Stipitata.*

2246. 1. G. *pectinatum*, Spr. p. 518, n. 3, Syn. Car. 325.

2247. 2. G. *quadrifidum*, Spr. n. 4, Syn. Car. 326, non Pennsylv.
2248. 3. G. MINIMUM, L. v. S., Syn. Car. 327, Sprengel, n. 5, etiam non rarum in Pennsylv.

** *Sessilia.*

2249. 4. G. *rufescens*, Spr. 6, Syn. Car. 328, nondum Pennsylv.
2250. 5. G. *hygrometricum*, Spr. 8, Syn. Car. 329, valde vulgare etiam Pennsylv.
2251. 6. G. FIBRILLOSUM, L. v. S., Syn. Car. 330, Spreng. n. 9, etiam in Pennsylvania et plerumque ad truncos vetustos in terra ex cortice corrupto orta. Interdum eleganter areolatum a fibrillulis.

Genus 101. BOVISTA.

2252. 1. B. *gigantea*, Spr. p. 523, n. 1, Syn. Car. 336, Lycoperd. et rarius in Pennsylv.
2253. 2. B. CANDIDA, L. v. S., Syn. Car. 333. Nullimodo ad priorem pertinet ut vult Sprengel, p. 524.
2254. 3. B. *nigrescens*, Spr. n. 2, Syn. Car. 331, et Pennsylv.
2255. 4. B. *plumbea*, Spr. n. 3, Syn. Car. 332, et Bethl.
*2256. 5. B. CRANIIFORMIS, L. v. S., rarior, sed ubi adest copia magna, in Pomariis. Fungus inter maximos et distinctissimos, Bethl.

B. stipitata; stipite obconico crasso, triunciali diametro, brevi, vix radiculoso aut saltem parum, expanso in capitulum peridiosum applanato-turbinatum latitudinem pedalem attingens, superne subdepressum, plicato-undulatum exacte referens cranium humanum. Statu immaturo colore gaudet expallido-subcarneo. Peridio externo membranaceo, furfure minuto tecto, deciduo, plagis magnis irregularibus. Interno membranaceo glabro. In stipite plicae rariores observantur. Peridio interno repleto floccis densissimis adhaerentibus, Sporidiis pedicellatis floccis infixis copiosis, cum floccis lutescenti-ochraceis demum griseis. Gregatim crescit.

Genus 102. LYCOPERDON.

2257. 1. L. *pratense*, Spr. p. 523, n. 4, Syn. Car. 338, et. Pennsylv.
2258. 2. L. *umbrinum*, Sp. n. 5, Syn. Car. 342, et. Pennsylv.
*2259. 3. L. *echinatum*, Spr. n. 6, Bethl. passim.
2260. 4. L. *pyriforme*, Spr. n. 8, Syn. Car. 344, frequens, Bethl.
2261. 5. L. *excipuliforme*, Sp. 10, Syn. Car. 339, et Bethl.
2262. 6. L. *quercinum*, (Spr. molle) n. 12, Syn. Car. 343, et Bethl.
2263. 7. L. *maximum*, Spr. n. 2, perperam L. perlatum, Syn. Car. 340, etiam Pennsylv.
2264. 8. L. *areolatum*, Sp. n. 3, olim L. candidum, Syn. Car. 341, frequens etiam Pennsylv.
2265. 9. L. *utriforme*, Persoon. Synops. Satis distinctum rarius Bethl.

Genus 103. TULOSTOMA.

2266. 1. T. *brumale*, Spr. p. 524, Salem et New York.
*2267. 2. T. *squamulosa*, non varietas prioris sed verisimiliter *Rimella* Rafinesque, Syst. F. Veg. p. 139. In arena volatili juxta ripas fluminis Yadkin Carolinae.

Tribus 3. PHYSAREI.

Genus 104. LYCOGALA.

2268. 1. L. *miniatum*, Spr. p. 533, n. 3, Syn. Car. 353, et Pennsylv. frequens.
2269. 2. L. *punctatum*, Sp. n. 4, Syn. Car. 354, etiam frequenter occurrit in Pennsylv.

Genus 105. Didymium.

*2270. 1. D. *lobatum*, Spr. p. 528, Cionium, n. 11, Torrey ex New York.
2271. 2. D. *squamulosum*, Sp. n. 1, Syn. Car. 363, et. Pennsylv.
2272. 3. D. *difforme*, Spr. Diderma, p. 526, Syn. Car. 366, et. Bethl.
2273. 4. D. *testaceum*, Spr. Cionium, n. 9, Syn. Car. 364, non Pennsylv.
2274. 5. D. *globosum*, Sp. C. n. 8, Syn. Car. 365, et. Bethl.

Genus 106. Physarum.

* *Stipitatae.*

*2275. 1. P. *leucopus*, Spr. p. 526, n. 1, rarius Bethl.
2276. 2. P. *hyalinum*, Sp. n. 2, Syn. Car. 371, et Pennsylv.
2277. 3. P. *nutans*, Sp. n. 3, Syn. Car. 372, etiam Pennsylv.
*2278. 4. P. *muscicola*, Sp. n. 4, Dr Torrey misit ex New York.
2279. 5. P. *squamulosum*, Sp. n. 6, Syn. Car. 378, et. Bethl.
2280. 6. P. *farinaceum*, Sp. n. 9, Syn. Car. 380, et. Bethl.
2281. 7. P. *Clavus*, Sp. n. 11, Syn. Car. 381, nondum Pennsylv.
2282. 8. P. *tigrinum*, Sp. n. 12, Syn. Car. 379, et. Bethl.
2283. 9. P. *compactum*, Sp. n. 13, Syn. Car. 382, *polycephalum*, rarius Wilkes County, Carolinae.
2284. 10. P. *columbinum*, Sp. n. 14, Syn. Car. 377, nond. Pennsylv.
2285. 11. P. *viride*, Sp. n. 18, Syn. Car. 374, et. Bethl.
2286. 12. P. *aureum*, Sp. n. 20, Syn. Car. 375, et. Bethl.
2287. 13. P. *aurantiacum*, Sp. var. prior., Syn. Car. 376, nondum Bethl.
*2288. 14. P. *xanthopus*, Sp. Cionium, n. 3, Bethl. in foliis dejectis Peridiis subtus umbilicatis: stipite aureo.
2289. 15. P. *sulphureum*, A. Sp. 93, Syn. Car. 373. Species distincta. Cur non a Sprengelio ex Synopsi Fungorum Lusatiae adoptata nescio.

** *Sessilia.*

2290. 16. P. *contextum*, Syn. Car. 367, Salem et Bethl. Spr. Diderma.
2291. 17. P. *cinereum*, Spr. 25, Syn. Car. 370, Carol. et New York.
2292. 18. P. *confluens*, Spr. 23, Syn. Car. 368, nond. Pennsylv.
2293. 19. P. *bivalve*, Spr. 24, Syn. Car. 369, elegans, Salem.
*2294. 20. P. elegans, L. v. S., rariter inventum Salem—valde distinctum.
P. peridiis majusculis aggregatis, densis, subrotundis, difformibus, convexis, superne applanatis, eleganter amethystinis, subrugosis. Sporidiis nigrofuscis, conglomeratis, floccis crassiusculis.
*2295. 21. P. *reticulatum*, Spr. n. 26, specimina optima Salem et Bethl.
*2296. 22. P. vermiculare, L. v. S., rarius in cortice, Carolina.
P. minus, vermiculare, subreticulatim serpens, teres. Peridiis glabris badiis. Floccis raris. Sporidiis lutescentibus.
*2297. 23. P. effusum, L. v. S., longe lateque effusum in pulvere vaporario, Salem.
P. peridiis longitudinaliter serpentibus reticulatis, aut omnino late effusis, candidis, fere membranaceis. Floccis et sporidiis crebris nigrescentibus. Peridiis valde applanatis.
*2298. 24. P. luteo-valve, L. v. S., in stipitibus dejectis rarius, Carolina.
P. lobato-difforme, convexum, subconfluens. Peridiis extus aurantio-splendentibus, quasi compressis, bivalvibus. Sporidiis flavissimis.
*2299. 25. P. atrum, L. v. S., mense Decembri in cortice rarissime, Bethl.
P. sessile, oblongum aut subdifforme, aggregatum, extus nigrum aut subcinerascens; peridiis glabriusculis sed eleganter reticulatis. Sporidiis atris, floccis raris candidis interspersis, compactioribus. Majus P. cinereo cui affine.
*2300. 26. P. polyaedron, L. v. S., in antiquissimis truncis Juglandinis, Bethl.
P. gregarium ac subsparsum. Peridiis majusculis, nigro-fuligineis, absque splendore, subhemisphae-

ricis, exacte pentagonis, lateribus nempe planis, rugosis; tandem quasi stellatim rupta parte inferiori, persistente. Tum Actinodermium minutum refert. Sporidiis nigro-fuligineis; floccis compactis concoloribus interspersis.

2301. 27. P. CAESPITOSUM, L. v. S., pulcherrimum. In foliis et stipitibus Rhododendri, Bethl.

P. substipitatum aut saltem basi attenuata, caespitosim crescens et sparsim. Caespitulis 3 linearibus; peridiis stipatis, turbinatis, ovatis, basi contracta, membranula exteriori luteo-squamulosa aut punctato-squarrosula. Sporidiis nigro-brunneis; Floccis citrinis inspersis.

Genus 107. LEANGIUM.

2302. 1. L. *floriforme*, Spr. Cionium, p. 529, n. 6, Syn. Car. 362, vastissimis gregibus vulgare occurrit in truncis, Bethl.

*2303. 2. L. *vernicosum*, Spr. Leocarpus, p. 526, n. 1, passim in Bethlehem ad stipites.

*2304. 3. L. STIPATUM, L. v. S., in ligno cariosissimo, Bethl. rarius.

L. peridiis flexuosim erectis, dense stipatis, longissimis, teretibus; caespites unciales efformantibus ex sese incumbentibus peridiis, amoene incarnatis. Membrana peridiorum fragillima, glabra. Stipites brevissimi tenues, distantes concolores adsunt, sed primum peridia conglomerata sessilia videntur. Sporidiis concoloribus, interspersis floccis vagis crebris, rubro-incarnatis, demum subfuscescentibus.

Genus 108. CRATERIUM.

*2305. 1. C. *vulgare*, Spr. p. 525, n. 1, Carolina rarissime.

2306. 2. C. *leucocephalum*, Sp. n. 3, Syn. Car. 394, Arcyria, Salem.

*2307. 3. C. FLORIFORME, L. v. S., in lignis cariosis ex New York communicavit Dr Torrey.

C. fasciculatum, stipitatum stipitibus coalitis in unum longissimum, fusco-nigrum, fasciculo peridiorum obovatorum nigrorum coronatum. Floccis et sporidiis rubro-lateritiis.

*2308. 4. C. PORPHYRIUM, L. v. S., in lignis cariosissimis provenit, Bethl. Ut prius affine est *Trichiae botrytidi*, sic haec *Trichiae rubiformi*.

C. peridiis dense fasciculatis, turbinatis porphyriis, splendentibus; stipitibus brevissimis in massam crassam basilarem connatis. Sporidiis et floccis subelastice expansis, rubris. Format caespites elongatas.

Genus 109. PERICHAENA.

2309. 1. P. *circumscissa*, Licea Sprgl. p. 524, n. 2, Syn. Car. 419, et frequens Pennsylv.

*2310. 2. P. MARGINATA, L. v. S., rarissime inventa in ramis Carolinae.

P. peridiis sessilibus, approximato-confluentibus, circumscissis, polyaedris, inferiori parte quasi pyxidem efformante, margine prominente, cujus operculum pars superior applanata, minor. Colore externo griseo-albido. Pulverulentum. Floccis raris cum sporidiis luteis. Post occasum operculorum, pyxides apertae, fundo spadiceo relinquuntur, magnitudine seminis Papaveris.

*2311. 3. P. VAPORARIA, L. v. S., non rara Bethlehemiis, in pulvere vaporario.

P. minuta, circumscissa; peridiis sparsis, fuscis, difformibus submarginatis, applanatis. Sporidiis crebris—floccis raris flavissimis.

Genus 110. LICEA.

2312. 1. L. *fragiformis*, Sprgl. p. 524, n. 9, Syn. Car. 419, et Bethl.

2313. 2. L. *fallax*, Sp. n. 10, *effusa*, Syn. Car. 420, et. Pennsylv.

2314. 3. L. *variabilis*, Sp. n. 4, Syn. Car. 418, frequens etiam Bethl.

*2315. 4. L. *flexuosa*, Sp. n. 7, frequens ad truncos, Bethl.

*2316. 5. L. *pusilla*, Sp. n. 8, et Salem et Bethl. passim obvia.

*2317. 6. L. MACROSPORA, L. v. S., in peponibus putridis effusa, Bethl.

L. effusa, difformis, confluens, lenticularis et globosa, applanata, interdum reticulata. Peridiis cinereo-albidis. Sporidiis majusculis nigris, floccis parcissimis interspersis. Longe lateque serpit.

*2318. 7. L. EPIPHYLLA, L. v. S., rarissime occurrit in foliis dejectis, Bethl.

L. valde varia, globosa, subrotunda, sed plerumque teres, elongata, serpula aut vermicularis. Peridiis convexis nigris, subgrisescentibus. Sporidiis nigris, creberrimis interdum fuscescentibus.

*2319. 8. L. NITENS, L. v. S., rarius in cortice dejecto observata, Bethl.

L. gregaria, spadicea, nitens, subrotunda, teres aut varia, semper convexa. Sporidiis crebris lutescentibus. Superficie glaberrima. Minor.

Tribus 4. TRICHIACEI.

Genus 111. TRICHIA.

2320. 1. T. *Botrytis*, Spr. p. 530, n. 1, Syn. Car. 383, et. Bethl.

2321. 2. T. *rubiformis*, Sp. n. 2, Syn. Car. 384, frequens, Bethl.

*2322. 3. T. MINIATA, L. v. S., affinis priori, sed dimidio minor et colore alieno, sub cortice, Bethl.

T. brevissime stipitata, fasciculata; peridiis invicem arcte stipatim adpressis, oblongo-pyriformibus, tenuibus ac fragillimis, rubro-miniatis. Capillitio (cum Sporidiis) miniato, non valde expandente. Fasciculi parvi—stipites vix coaliti.

2323. 4. T. *fallax*, Spr. n. 3, Syn. Car. 385, frequens et in Pennsylv.

2324. 5. T. *clavata*, Sp. n. 4, Syn. Car. 386, in Juglandibus, Pennsylv.

2325. 6. T. *nigripes*, Spr. n. 5, Syn. Car. 387, rarior; etiam in Pennsylv.

2326. 7. T. *ovata*, Sp. n. 6, Syn. Car. 388, ubique frequens sub cortice.

2327. 8. T. *olivacea*, Sp. n. 7, Syn. Car. 389, et frequens in Pennsylv.

2328. 9. T. *nitens*, Sp. n. 9, Syn. Car, 390, et in Pennsylv.

2329. 10. T. *varia*, Sp. n. 10, Syn. Car. 391, frequens et in Pennsylv.

*2330. 11. T. PUNCTULATA, L. v. S., ad ligna cariosa rarior, Bethl.

T. sparsa, subrotundo-globosa, subsessilis, tamen podetio elevato crasso. Peridio olivaceo quasi punctulato. Capillitio cum sporidiis luteo. Minuta.

2331. 12. T. *serpula*, Sp. n. 11, Syn. Car. 392, frequens et Bethl.

2332. 13. T. *reticulata*, Sp. n. 12, Syn. Car. 393, etiam frequens ibid.

*2333. 14. T. ANGULATA, L. v. S., frequens in libro corticali interno decedentis corticis trunci Fraxini dejecti in montibus Lehigh prope Bethl.

T. sessilis, gregaria, longe lateque insuper membranulam (ut T. ovata) crescens. Peridiis adpressis invicem, variis, saepissime angulatis, superficie nitida sed subrugulosa, luteis; demum plerumque trifariam aut stellatim ruptis. Capillitio parco lutescente—cum sporidiis concoloribus.

*2334. 15. T. DIFFORMIS, L. v. S., in lignis caric emollitis Juglandis nigrae Manakes, Bethl.

T. sessilis, basi tamen attenuata, gregaria, interdum acervis minoribus subconfluens. Peridiis variiformatis, minoribus saepe compressis, subflexuosis, apice autem semper convexo; flavo-ferrugineis splendentibus, irregulariter ruptis. Capillitio lateritio, non valde prosiliente.

Genus 112. ARCYRIA.

2335. 1. A. *flava*, Sprgl. p. 530, n. 1, Syn. Car. 395, et. Pennsylv. et N. York.

2336. 2. A. *cinerea*, Sp. n. 2, Syn. Car. 397, frequens in Pennsylv.

2337. 3. A. *incarnata*, Sp. n. 3, Syn. 398, ibid.

2338. 4. A. *punicea*, Sp. n. 7, Syn. Car. 399, non rara et Pennsylv.

2339. 5. A. LUTEA, L. v. S., Syn. Car. 396, Spr. n. 4, nondum in Pennsylv.

2340. 6. A. GLOBOSA, L. v. S., Syn. Car. 400, Spr. n. 5, frequens in involucris Castaneorum etiam in Pennsylv.

*2341. 7. A. MINOR, L. v. S., affinis A. incarnatae in lignis mollibus, Bethl.

A. stipitibus basi incrassatis, subnigrescentibus, longiusculis. Cupula, aut parte inferiori peridii persistente, lata, membranacea manifestim extus venosa. Capillitio breviori saepe apice operculato frustulo peridii superni. Peridio ceterum longitudine stipitis, subconico. Sporidiis, cum toto fungo, incarnato lateritiis. Sparsim crescit.

Genus 113. Diachaea.

2342. 1. D. *leucostyla*, Spr. p. 532, St. n. 3, Syn. Car. 401, frequens etiam Pennsylv. Saepe in graminibus.

Genus 114. Stemonitis.

2343. 1. S. *typhina*, Sp. n. 1, Syn. Car. 402, vulgaris in Pennsylv.
2344. 2. S. *fasciculata*, Sp. n. 2, Syn. Car. 403, ibid. vulgaris.
2345. 3. S. *tubulina*, Sp. n. 4, Syn. 404, et in Pennsylv.
2346. 4. S. *physarioides*, Sp. n. 7, Syn. Car. 405. Frequens ibid.
2347. 5. S. *ovata*, Sp. n. 6, Syn. Car. 406, in Thelephoris exsoletis passim mihi obvia in Pennsylv.
2348. 6. S. *papillata*, Sp. n. 5, Syn. Car. 407, Philadelphiis inveni.
*2349. 7. S. maxima, L. v. S., insuper pileos exsoleti Polypori magnis plagis effusa, Bethl.
S. caespitosa; membrana stromatica late effusa, crassiuscula fuscopurpurea, saepe decedente. Stipitibus nigris satis crassis segregatis, sed convergente-inclinatis, 3 lin. longis. Capillitiis longissimis, semiuncialibus, non inter se coalitis sed densim fasciculatis subflexuosis fusco-ferrugineis. Sporidiis creberrimis concoloribus.
*2350. 8. S. digitata, L. v. S., lignis cariosissimis Carolinae et Pennsylv. frequens.
S. sparsa, majuscula. Stipites quasi ex pluribus coalitis, formantur, crassi, basi incrassata, fuscescentes, et coronantur fasciculo digitatim pandente peridiorum 3—6, cylindrico-ovatorum, paulo breviorum stipitibus. Capillitio cinereo; sporidiis copiosis concoloribus.
*2351. 9. S. crypta, L. v. S., rarior mihi obvia in fissuris trunci cariosissimi, Nazareth.
S. in membranula stromatica tenui sparsim stipites filiformes subdecumbentes et tamen rigidiusculi observantur, fere ad basin capillitio, laxim contexto, longo, circumvoluti—peridio facillime evanescente et tantum in junioribus observando. Sporidiis majusculis substipitatim adhaerentibus capillitio, colore fuligineo purpurascenti. Demum copiosim sparsa inquinant lignum.

Genus 115. Dictydium.

2352. 1. D. *microspermum*, Spr. 531, n. 2, Syn. Car. 409, et. Pennsylv.
*2353. 2. D. *splendens*, Sp. n. 3, ad ligna cariosa, Bethl.
2354. 3. D. *venosum*, Sp. n. 4, Syn. Car. 410, et in Pennsylv.
2355. 4. D. *cernuum*, Sp. n. 1, Syn. Car. 408, frequens Bethl.

Genus 116. Cribraria.

2356. 1. C. *purpurea*, Sp. 530, n. 1, Syn. Car. 412, et. Pennsylv.
2357. 2. C. *macrocarpa*, Sp. n. 4, Syn. Car. 411, et in Ohio ad terram.
*2358. 3. C. *rufescens*, Sp. n. 2, in viis sylvestribus ad terram cum priori Gnadenhutten, Ohio.
2359. 4. C. *argillacea*, Sp. n. 5, Syn. Car. 413, nondum Pennsylv.
2360. 5. C. *vulgaris*, Sp. n. 6, Syn. Car. 414; rarior et in Pennsylv.
2361. 6. C. *tenella*, Sp. n. 7, Syn. Car. 415, et in lignis cariosis Pennsylv.
2362. 7. C. minutissima, L. v. S., species vix nudo oculo distinguenda, sed valde memorabilis, inventa Carolinae et Pennsylv. lignis cariosis, ob fungum alium lente subjectis—passim.
C. Cupula sporangii fere globosa, apice contracto, unde expanditur reticulum globosum, diametro cupulam excedens, valde regulare, colore nitido-brunneo. Sporidiis luteo-brunneis. Stipite gra-

cili, filiformi, sublongo, fusco. Pupula peridii persistens cum reticulo sporidifero imposito, refert figuram 8.

Nota.—Fungillus saepius mihi obviam factus est in Pennsylvania, minutus, candidissimus, qui tamen vix unquam rite explicatus fuit, de quo dubiosus sum an ad genus *Cirrholum*, Sys. Veg. F. p. 144, pertineat, icone Martii inviso. Ulterius de hoc inquirendum. Ceterum et in Pennsylvania multo plures species fungillorum hujus familiae eruendae sunt—nisi vigere solerent sole tam torrido, ut jam observatum p. 32 Synopseos Fungorum Carolinae.

Ordo III. TRICHODERMACEI.

Tribus 1. Aethalini.

Genus 117. Spumaria.

2363. 1. S. *Mucilago*, Spr. p. 532, n. 1, Syn. Car. 360, non Pennsylv.

*2364. 2. S. Licheniformis, L. v. S. Fungus ex distinctissimis, an Generis novi? Rarius occurrit, sed ubi adest, magna copia in cortice truncorum dejectorum Robiniae, Bethl.

S. plagis, 1—2 uncialibus determinatim effusis super corticem, omnino e longinquo Lichenem crustuosum referentibus. Propius examinata ex peridiis rotundatis turbinatis, difformibusque satis elevatis, basi communi emanentibus, singulis magnitudine seminis Cannabis, constare patefit. Peridiis cellulosis, extus floccosis, albo-cinereis; intus repletis sporidiis coacervatis aterrimis, filis raris albis interstinctis.

Genus 118. Enteridium. Syst. Veget. F. p. 146.

365. 1. E. cinereum, L. v. S., rarius insuper putridas herbas effusum, Bethl. An hujus generis, cui tamen valde simile aut Lignydium?

E. longe lateque effusum, varie contortum et non inapte referens congeriem intestinorum, serpens, hinc inde reticulatim confluens, serpulis semper applanatis. Cortice peridii membranaceo, firmo crassiusculo, candido. Sporidiis atro-fuligineis, membranulis albis crebris, demum filamentosis, interspersis. Superficie plicato-rugosa. Ad pedalem longitudinem effusum inveni.

Genus 119. Pittocarpium, Lk.

*2366. 1. P. *flavum*, Lk. et Syst. Veg. F. p. 146, passim in truncis Bethl. An rite evolutum?

Genus 120. Aethalium.

2367. 1. A. *flavum*, Sprgl. p. 533, n. 1, Syn. Car. 557, et Pennsylv.

2368. 2. A. *candidum*, Sp. n. 3, Syn. Par. 559, nond. Pennsylv.

2369. 3. A. *violaceum*, Sp. n. 2, Syn. Car. 556, ad truncos etiam frequens in Pennsylv.

2370. 4. A. *vaporarium*, Pers. Synops., Syn. Car. 558, frequentissimum in Vaporariis et Pennsylv. Cur Sprengelius omisit fungum notissimum vulgo nomine "Flos vaporarii" notum nescio.

*2371. 5. A. *muscorum*, L. v. S., Conspectus. Passim in muscis Carolinae.

*2372. 6. A. ferrincola, L. v. S., satis affinis R. rufae, sed peridio exteriori multo flocciosori. Differt etiam magnitudine et loco, nam, mirabile dictu, in Ferro recenter ex igne sumpto, mihi obviam factum. Salem Carolinae.

A. peridiis majusculis, uncialibus, tractu longitudinali saepe confluentibus, pulvinatis, extus rufo-floccosis, membrana basilari e floccis contexta latius effuso, quam ipse peridium pulvinatum—Sporidiis creberrimis purpureo-fuligineis. Strata interseptantia membranacea candida sunt.

N. B. Sequens historia memorabilis hujus fungi. Faber Salemitanus, vir literarum non expers, frustrum ferri jam malleo et igne ad opus quoddam praeparatum, subito aliunde vocatus, ex manu dejiciebat, sero tempore diei. Mane postero rediens, obstupuit in hoc frustro ferri, transversim jacente insuper receptaculum aquae, quod more fabrorum in promptu fuit, longam seriem Fungi cujusdam per noctem ortam observans, sibi omnino ignoti. Statim puerum misit me ad examen excitandum, ferro non ex loco remoto. Aeque miratus sum, loco tam inopinato, distinctam speciem Aethalii invenire. Fatendum est, seriem fungorum—bipedalem, sed interruptam, confluentium, demum e ferro in lignum receptaculi aquae uno latere irrepsisse, more tali autem, ut apertum fuit ex ferro in lignum, non ex ligno in ferrum expansam. Duodecim horae vix intervenerant post tempus, quo id frustrum ferri in igne et sub malleo fuerat.

Genus 121. Reticularia. Fries. Sys. Veg. p. 147.

2373. 1. R. *argentea*, (Lycogala Sprgl. 533, n. 2), Syn. Car. 352, vulgaris et interdum maxima etiam Bethl.

2374. 2. R. *Stronglium*, Sprgl. p. 533, Syn. Car. 351, nondum Pennsylv.

*2375. 3. R. *maxima*, Fr. Sys. Veg. pag. citata. Rarius et insignis species in trunco semivivo Castaneae, Bethl.

*2376. 4. R. *applanata*, (Diptherium Ehrenb.) in cortice et ligno salicino Bethlehem. Fungus distinctissimus.

2377. 5. R. *rufa*, (Fuligo, Syn. Car. 355) rara et Pennsylv.

Genus 122. Lachnobolus. Fries. Sys. Veg. p. 148.

2378. 1. L. cinereus, L. v. S., insuper stipites, &c. dejectos effusus, Salem.

L. longitudinaliter effusus, stipites ambiens more Spumariae. Peridio tenerrimo fugace candido cinereo, vix continuo sed quasi furfuraceo, adnato capillitio. Basis est hypothallus ut in L. cribroso. Capillitio aterrimo basi—versus apicem abiente in intricatim ramosissimos floccos albos. Sporidiis cinereo-nigris minutissimis.

Tribus 2. Trichodermei.

Genus 123. Hyphelia. Fries. Syst. Veg. p. 149.

*2379. 1. H. *rosea*, F. S. V. p. 149, rara Nazarethis in truncis corruptis sub cortice.

2380. 2. H. *dubia*, (Trichoderma dubia Pers. Synops.) Syn. Car. 520, passim et Pennsylv. in foliis dejectis.

Genus 124. Ostracoderma. F. S. V. p. 150.

*2381. 1. O. spadiceum, L. v. S., ramis Mori albae dejectis passim, Bethl.

O. membrana peridii satis firma, quasi punctato-granulosa, superficie badio-spadicea; A. ¼ ad 1 uncialem latitudinem attingens. Subrotundum, applanatum, ambitu sublobatum; altitudine aut crassitie vix lineari. Peridium absque ullo vestigio floccosum repletum sporidiis globosis, luteis, pellucidis, et Torulae ad instar articulatim aut moniliformiter invicem adhaerentibus—in aqua autem diffluentibus.

Genus 125. Institale ? F. S. V. p. 150.

*2382. 1. I. maximum, L. v. S., an hujus Generis? Fungus interea memorabilis; in Hymenio exsoleti Polypori igniarii in Salice mihi obvius, Bethl.

I. 1—2 uncialis, confluens suborbiculatim. Tegumento fibroso-floccoso radiato. Fibris ramosis crassiusculis in membranam albidulam contextis, ipsis rubro fuscis. Sub hoc integumento aut peridio, sporidia copiosa fusco-brunnea aggregata sunt, filis aut floccis interspersis.

Tribus 3. Pilacrini.

Genus 126. Asterophora.

*2383. 1. A. *agaricoides*, (Agaricus lycoperdioides Pers.) rarissime in Agaricis putridis Carolinae.

*2384. 2. A. effusa, L. v. S., an hujus Generis? certe affinis. Propullans ex rimis corticis Quercus et Juglandis truncorum dejectorum, et primo obtutu initia mentiens Polypori cujusdam. Perfectis et quidem minoribus speciminibus vix $\frac{1}{6}$ uncialibus manifestim stipitata, in majoribus 1—2 uncialibus —stipes confusus cum peridio, Bethl.

A. Peridio extus strigoso-floccoso, imo quasi hydnoideo, pallido; floccis nempe suberectis hydnoideis, ceterum pulvinato. Stipitibus crassis confusis in lignum corticis penetrantibus. In minoribus rite evolutis, peridium est capitulato-turbinatum, ex stipite albido agaricoideo sese evolvens, minus strigosum. Demum fatiscens in pulverem copiosum lutescentem compactum (congeriem sporidiorum). Onygenis proximum. An Ecchyna, F. p. 152.

Genus 127. Onygena.

2385. 1. O. *equina*, Spr. p. 528, n. 1, Syn. Car. 428. In Pennsylv. hunc fungum optime evolutum et magna copia inveni in unguibus equorum et cornubus Bovum, Bethl.

2386. 2. O. *decorticata*, Spr. n. 2, Syn. Car. 429. Nondum in Pennsylv.

Tribus 4. Myrothecii.

Genus 128. Dichosporium. F. S. V. p. 152.

2387. 1. D. *aggregatum*, (Spumaria physaroides) Syn. Car. 361, rarius in Carolina.

Genus 129. Myrothecium.

*2388. 1. M. *inundatum*, Spr. p. 534, n. 3, in Agaricis putridis, Bethl.

*2389. 2. M. *Carmichaeli*, Sp. n. 1, in herbis putridis, Bethl.

*2390. 3. M. *Verrucaria*, Sp. n. 2, in foliis Cucurbitaceorum putrescentibus, Bethl.

Genus 130. Trichoderma.

2391. 1. T. *viride*, Spr. p. 555, n. 1, Syn. Car. 518, vulgaris ubique ad ramulos.

2392. 2. T. *varium*, Spr. n. 2, Syn. Car. tuberculatum 523, et Bethlehemis valde vulgaris ad terram.

*2393. 3. T. rubropallens, L. v. S., ad vetustos Polyporos observatum, Bethl.

T. pulvinatum, confluens. Strato peridioso albo, pallido—fatiscente in pulverem sporidiosum rubrum. Affine et evidenter congenerum T. viridi.

Ordo IV. SCLEROTIACEI.

Tribus 1. Rhizogonei.

Genus 131. Pachyma.

2394. 1. P. Cocos, L. v. S., Syn. Car. Sclerotium solummodo inveni in pinetis Carolinae.

Genus 132. Anixia. S. V. Fr. p. 154.

*2395. 1. A. interrupta, L. v. S., in terra ex putrescentibus truncis orta in cavitate, Bethl.
A. pallido-carnea, tuberibus interruptim connexis ad longitudinem uncialem aut biuncialem, tamen faciliter separabilibus. Insidens fibrillulis himantioideis longe repentibus. Superficie lacunosa. Tuberibus ¼ unciali crassitudine, intus albis, cavis.

Genus 133. Rhizoctonia.

*2396. 1. R. Batatas, L. v. S., subcorticalis, in terra ex cortice corrupto orta, Bethl.
R. uncialis aut ultra, teres et depressa, flexuosa, sublacunosa, utrinque acuminata; fibrillulis radiciformibus semper ex apicibus emanentibus. Multis tuberibus confluentibus, carneo-albis, intus albis, primum cartilagineo-carnosis, odore forti; demum induratis. Fibrillulis rhizomorpheis candidis. Exacte referunt, tuberes Convolvuli Batatas.

*2397. 2. R. radiciformis, L. v. S., locis similibus: ex New York misit Cl. Torrey etiam Bethl.
R. multo latior; tuberibus compresso-plicatis, valde difformibus, saepe elongatis, pallido carneis—uncial; longitudine, interdum separabilibus in minores. Fibris himantioideis crassis longe lateque sub cortice repentibus quibus insident irregulariter greges tuberum, radicibus Iridum satis similium. Intus albis tuberibus.

*2398. 3. R. Himantia, L. v. S., locis similibus Carolinae. An status junior prioris?
R. fibrillulis crebris rhizomorphoideis, latis, byssinis cinereis denique pulverulentis, undique emanentibus ex tuberibus difformibus minoribus, tomentoso-involutis, albido-pallidis.

2399. 4. R. Placenta, L. v. S., rarius sub cortice putridi trunci maximi jacentes insuper excrementa larvarum et cetera latissime expansa. Bethl. in montibus Lehigh.
R. Fibrillulis ad pedalem longitudinem et latitudinem palmatim radiantibus, saepe in tenuissimam membranam hymantoideum aut immo arachnoideum interruptim expandentibus. Hinc inde, plus minusve distantia in membrana observantur peridia aut tubercula innata, applanata, difformiter lobata, 1—2 lineari diametro, sed etiam semiunciali aut immo unciali, referentia placentas lobatas subtus planissimas, tenues, tamen applanato-pulvinatas superne, superficie subaequali, minutim subtomentulosas, colore eleganter ex incarnato badio-rufo. Fibrillulis et in membranam contextis et distinctis concoloribus, in ambitu tamen candidis. Tuberibus intus albidis cellulosis, omnino hujus generis—ceterum duris ac etiam in maximis crassitie lineam aut 1½ lineam non excedentibus. Differt ceteris Rhizoctonis quam maxime, tomento denso tenero, quo involutae sunt placentae tuberiformes. Quanquam hic fungus distinctissimus tantum semel mihi obviam factus est, nil dubitandum de eo—quia in arbore ingenti, copia maxima aderat. Elegans membrana fibrillosa, tam delicata, ut vix separabilis quanquam laxissime incumbit quisquiliis subcorticalibus.

Tribus 2. Apiosporii.

Genus 134. Chaetomium.

*2400. 1. C. Douglasii, L. v. S. Fungus valde memorabilis, affinis Sphaeriae comatae in caulibus Hyssopi anisati adhuc vigentis, versus radices dense investiens caules, mihi communicavit D. Torrey ex expeditione Capt. Douglass in vicinitate Lacus Huron inventum.

C. tomento olivaceo-virente non intertexto sed floccoso-fastigiato, proveniente undique sed praesertim apice ex peridiis, laxiter tantum caule affixis, majusculis, globoso-ovatis, fragillimis, intus demum cavis, densim aggregatis, nigro-fuligineis, tomento concolori. Fasciculus fastigiatus tomenti assurgit ad bilinearem altitudinem cum peridiis, dimidio minoribus, investientis caules. Peridiis apice apertiusculis.

*2401. 2. C. Typhae, L. v. S., non rarum in foliis typhinis, Bethl.

C. minutissimum, atrum, punctiforme; pilis tam brevibus involutum, ut vix discernantur nisi lente augentiori, situm inter nervos folii.

Genus 135. Apiosporium.

*2402. 1. A. *Salicinum*, Kunz. Myc. Hefte, 1, p. 15, longe lateque effusum in trunco Liriodendri—vix saltem differt a fungo Kunziano mihi ab ipso benevole communicato, nisi effusione latissima.

Genus 136. Coniosporium.

*2403. 1. C. *olivaceum*, Link. Dissert. I, S. V. F. p. 156, ad ligna antiqua.

*2404. 2. C. atrum, L. v. S., late effusum in interiori latere trunci Cerasi, Bethl.

C. peridiis oblongis ovatis, aggregatis; extus e sporidiis subalbo-pulverulentum.

*2405. 3. C. strobilinum, L. v. S., interiori latere squamarum strobilorum Pini inopis juxta Philadelphiam increscit.

C. densissime aggregatum, maculas effiguratas aterrimas formans, constantes ex innumeris minutissimis linearibus peridiis, paralleliter sed abbreviatim confluentibus. Statu madido subnitent; sicco vix distinguenda singula peridia. Subpulverulentum superficie.

Genus 137. Illosporium.

*2406. 1. I. *coccineum*, F. S. V. p. 156, Tubercul. rosea Persoon., in Lichenibus praesertim Parmeliis, Bethl. et Salem.

*2407. 2. I. caesium, L. v. S., in ligno udo decorticato Juglandis albae, Nazareth.

I. minutum, difforme, aggregatum, varie lobatum in ambitu. Peridia vix nisi colore caesio-albo nudo oculo perceptibilia saepe confluunt. Innumera in liburni rimis sita. Demum fatiscent. Huc certissime pertinet nec idem cum Aegerita caesia nostra.

Tribus 3. Sclerotii.

Genus 138. Periola.

*2408. 1. P. *pubescens*, F. p. 267, in ligno putrido Bethl.

Genus 139. Acinula.

*2409. 1. A. *candicans*, F. p. 267, in foliis dejectis Lauri Borboniae ex Georgia missis, a Cl. Leconte. Multo major videtur quam fungus Friesianus. An nova species.

Genus 140. Pyrenium. F. Myc. p. 244, Syst. Veg. F. p. 94, inter Clavatos. Huc pertinet certissime.

2410. 1. P. *terrestre*, F. p. 244, Syn. Car. 530, nec Pennsylvania.
*2411. 2. P. collae, L. v. S., in colla indurata mucosa, Bethl.
P. magnitudine seminis papaveris, nidulans in colla et aggregatim aut caespitosim prorumpens, ovato-globosum, incarnato-aurantium, tomento albido subinvolutum. Intus similare. Durum.

Genus 141. Acrospermum.

2412. 1. A. *compressum*, F. p. 245, n. 1, Syn. Car. *Clav. herbar.* etiam Bethlehemis.
*2413. 2. A. *conicum*, F. 3, rarius ad ligna Bethl. et in plantarum caule.
*2414. 3. A. *cornutum*, F. 4. In Agaricis rarius Bethl.

Genus 142. Sclerotium.

* *Libera*, 1.

2415. 1. S. *complanatum*, F. n. 1, Syn. Car. 311, et. Bethl.
2416. 2. S. *scutellatum*, F. n. 2, Syn. Car. 318, et. Pennsylv.
*2417. 3. S. *excentricum*, F. n. 4, rarissime, Bethl. ad stipites.
2418. 4. S. *semen*, F. n. 5, Syn. Car. 314, frequens ubique vere.
*2419. 5. S. *vulgatum*, F. n. 6, solummodo Carolina inventum.
*2420. 6. S. *tectum*, F. n. 11, in receptaculis et calycibus Tagetum et Zinniarum Hort. Bethl.
2421. 7. S *fungorum*, F. n. 15, Syn. Car. n. 2 et 4, et. Bethl.
*2422. 8. S. *truncorum*, F. 16, Bethlehem an Rhizoctoria.
2423. 9. S. *muscorum*, F. 17, Syn. Car. 308, et. Pennsylv.
*2424. 10. S. *atrovirens*, F. 14, in cortice quercino, Bethl.
*2425. 11. S. gregarium, L. v. S., in putrescentibus dejectamentis hortorum, Bethl.
S. minutum, gregarium, interdum etiam sparsum, subglobosum, apice tamen subprominente, et passim deorsum quasi pseudostipite suffultum, aut plerumque sessile, ferrugineo-fuscum, paulisper rugulosum. Juventute subimmersum, albidum. Intus semper albidum. Sextuplo minus S. *semini*.
*2426. 12. S. Nicandrae, L. v. S., in exsoletis capsulis Nicandrae physaloidis, Bethl.
S. sparsum, applanato-subpezizoideum, subrotundum aut ambitu angulatum, atrum, medio subumbonatum et corrugatum. Magnitudine paulisper priorem speciem excedens. S. *incluso* non dissimili.
*2427. 13. S. lignatile, L. v. S., rarius occurrit in cortice putrescenti, Bethl.
S. magnitudine S. Seminis cui simillimum, e globoso-turbinatum, passim substipitatum, primum fuscum, demum nigerrimum, plicato rugosum in superficie. Intus candidissimum.
*2428. 14. S. medullare, L. v. S., loco inopinatissimo, videlicet in cavitate medullari caulium praesertim Phlogis undulatae hortis nostris emortuorum sed non putridium et adhuc stantium, locum medullae occupans, Bethl.
S. magnum, ad uncialem longitudinem nempe interdum protractum, sed saepe multo minus, interruptum, cylindricum aut difformiter lobatum, pluribus arcte invicem longitudinaliter arcte adpressis. Cortice externo fungi nigro, tuberculoso, et ime sulcato-striato. Intus albido-pallidum. Crassitiem pennae anserinae attingit. Specimina quidem cylindrica, semper subcontorta et proximis articulatim quasi adpressa.
*2429. 15. S. reniforme, L. v. S., in interiori latere corticis fraxinei rariter, Bethl.

S. minutum, lineam vix excedens, liberum, reniforme valde convexum, ex lutescenti-rufum, aggregatum, exsiccatum corneum. Superficie corrugata. Intus similare, sed demum subfatiscens centro.

* *Libera*, 2.

*2430. 16. S. *pubescens*, F. n. 20, in Agaricis non freq. Bethl.

*2431. 17. S. *floccipendulum*, F. n. 21, super folia dejecta, Bethl.

*2432. 18. S. *stipatum*, F. n. 22, specimina nostra in trunco Liriodendri putridissimo inventa, majora sunt et tam propinqua Myrioccoc. ut vix dubitandum ad hoc genus amandanda.

*2433. 19. S. *strobilinum*, F. n. 23, in Strobilis Pini, Bethl.

** *Erumpentia.*

*2434. 20. S. *immersum*, F. n. 25, in maximo caule Bethl.

*2435. 21. S. *sanguineum*, F, n. 27, an Perisporium? In foliis Iridis virginicae vulgaris, Bethl.

*2436. 22. S. *rugulosum*, F. n. 29, non rarum in Merulio tremelloso, Bethl.

*2437. 23. S. *Circaeae*, F. n. 34, in foliis Circaeae non infrequens, Salem ac Bethl.

*2438. 24. S. *Tragopogi*, F. 32, ad ignotas Caules in hortis, Bethl.

*2439. 25. S. GALLARUM, L. v. S., in Gallis cynipum exsoletis Quercor. Bethl.

S. erumpens, cinctum cortice gallarum, plerumque caespitosim, sed etiam simpliciter, subrotundum aut difforme. Extus nigrum, superficie valde rugulosa ac inaequali; intus solidum pallidum; ceterum valde minutum. Non infrequenter elongatim imo stellatim gregatum erumpit. Cortice gallae saepe squamulatim persistente in tuberculis.

*2440. 26. S. HYSTERIIFORME, L. v. S., in foliis Yuccae filamentosae cultae, Bethl. rarissime.

S. erumpens, demum omnino liberatum, simplex, elongatum, utrinque acuminatum, convexo-applanatum, satis elevatum, longitudine lineari, atrum, superficie longitudinaliter substriata, subtuberculosa. Convexo-connivens. Intus albidum.

2441. 27. S. APPLANATUM, L. v. S., in epidermide glabrata ramorum Castaneorum, Salem.

S. orbiculatum, ambitu sublobatum, vix erumpens, sed potius insidens epidermide, effuso-applanatum, 2 lineari diametro; superficie rufo-fusca, corrugato-punctulata. Intus subgrumosum, fuscum. Margine in ambitu, demum subinflexo.

*** *Subadnata.*

2442. 28. S. OROBANCHES, L. v. S., Syn. Car. 322, F. 37, et. Pennsylv.

2443. 29. S. *varium*, F. 38, Syn. Car. 313, rarius in Brassicae caule et Pennsylv.

*2444. 30. S. *pyrinum*, F. 39. In pomis putridis, Bethl.

*2445. 31. S. *compactum*, F. 40, in caulibus Elichrysi culti, Bethl.

2446. 32. S. *durum*, F. 42, Syn. Car. 310, et in Pennsylvaniae caulibus. In Euphorbia marginata Hortorum inveni specimina maxima, optima.

*2447. 33. S. *Brassicae*, F. 43, in foliis Brassicae, Bethl. No. 312, Syn. Car. perperam huc. Est sequens.

2448. 34. S. LILIORUM, L. v. S., (Syn. Car. 312, Brassicae) frequens in exsoletis caulibus Liliorum, Salem et Bethl.

S. epidermide tenui, primum tectum, varium et oblongum, crassiusculum, applanatum, nigrum, demum nigro-striatum, abbreviatum et utrinque subacuminatum. Intus album.

*2449. 35. S. *bullatum*, F. 41, sub epidermide Artemisiae Absinthii in Hortis Bethl. Intus album.

2450. 36. S. *Pustulla*, (S. quercinum) F. 47, Syn. Car. 317, et. Pennsylv.

*2451. 37. S. *convexulum*, L. v. S., affine S. duro, sed non tectum. In nodis caulium Angelicae lucidae, Bethl.

S. majusculum, convexum, ovatum, difforme, applanato-depressum, nigro-fuscum, interdum confluens; 2 lineas latum et longum. Superficie quasi subconcentrice rugosa. Intus ex albido-cinereum.

*2452. 38. S. DIFFORME, L. v. S., in junioribus ramulis aut stipitibus putridis rarius, Bethl.

S. difformiter elongatum; primum tectum, confluens, durum, ¼ unciali longitudine, satis elevatum, demum superficie undulata et striata, nigro-fuscum, aut nigro-cinereum. Intus candidum. Specimina minora 1—2 lin. diametro saepe elongato-ovata valde convexa.

*2453. 39. S. PETIOLORUM, L. v. S., in petiolis Rhois glabri. Bethl. non rarum.

S. elongato-ovatum, fere innatum, primum epidermide tenui tectum, demum atronitens, superficie

semper depressa et inde quasi marginatum, subtuberculosum. Lineam vix excedens. Intus fuscum grumosum.

*2454. 40. S. ANEMONES, L. v. S., in foliis subviridibus Anem. virginicae. Bethl.
S. majusculum lineam longitudine excedens, saepe confluens, subrotundum, bullatum, superficie inaequali lacunosa, brunneo-fuscum, situm in aversa pagina folii, macula orbiculata impressa in superiori. Intus lutosa demum fatiscens.

*2455. 41. S. AESCULI, L. v. S., in putridis Involucris Aesculi glabri, Bethl.
S. erumpens (nunquam tectum) ex epidermide Involucrorum frustulatim decedente, deorsum ab epidermide cinctum, globoso-difforme, subapplanatum, nigrum. Superficie ruguloso-plicata. Intus similare album. Aetate fere liberum fit, tantum basi affixum. Magnitudine lineari.

*2456. 42. S. ERUMPENS, L. v. S., in aversa pagina foliorum quercinorum, Bethl.
S. primum punctiforme, subimmersum; tum erumpens folio cinctum, disco subimpresso, fulvo-nigricans; demum subexpansum, nigrum, corrugatum, tenue, disco manifestius impresso, confluens, applanatum, tamen vix magnitudine lineam excedens. Passim occurrit in folio inde sublineolatim nigro-punctato.

**** *Xyloma.*

2457. 43. S. *populinum*, F. 52, Syn. Car. 320, freq. et Pennsylvania praesertim in foliis P. moniliformis.

*2458. 44. S. PLATANI, L. v. S., affine priori, sed multo minus in foliis Platani, Bethl.
S. innatum, aggregato-caespitosum, minutum, varium, tuberculosum, e fusco nigrum.

*2459. 45. S. SASSAFRAS, L. v. S., maculis fuscis lato expansis insidens in foliis, Sassaf. ibid.
S. innato-insidens, aggregatum in macula, angulatum difforme aut orbiculatum, semper depressum et quasi marginatum, superficie rugulosa, fusca demum nigra.

*2460. 46. S. *herbarum*, F. 55, apud nos in Pennsylvania praesertim in Solidaginibus, Bethl.

*2461. 47. S. FUSCO-MACULANS, L. v. S., in aversa pagina foliorum Sassafras, Bethl.
C. innatum, maculis brunneo-fuscis, difformibus ad tres lineas longas et latas, subeffiguratum. Demum pustulas elevatiores, nigro-fuscas, subcorrugatas, semilineares efficient.

*2462. 48. S. LAURICOLA, L. v. S., frequens in foliis dejectis Lauri aestivalis, Bethl. Rite evolutum occurrit in petiolis, aut in nervo medio—in ipso folio effusum maculatim et confusum.
S. in petiolis et nervo, nigrum, subtectum, innatum, minutum, regulare, subrotundum. Superficie punctulata. Intus albido-fuscum. In foliis ipsis nigro-fuscescens, maculatim effusum tenuissimum—ad diametrum, 2 linearem extensum.

*2463. 49. S. FRUSTULATUM, L. v. S, dubii generis? sed frequens in foliis quercinis, Bethl.
S. impresso-innatum, primum tectum, in aversa pagina situm, maculare, nigrum; demum frustulatim ruptum. Intus fuscescens Varie confluens, saepe excedens diametrum bilinearem.

*2464. 50. S. PRUNORUM, L. v. S., in foliis Pruni serotinae et virginicae dejectis, Bethl.
S. sistens maculas difformes, confluentes, fuscas, subeffiguratas in pagina superiori; in aversa observantur pustulae subrotundae elevatae innatae semipellucidae luteofuscae, siccitate subcorneae, corrugulatae, semilineares, plures aggregatae in eadem macula, cinctae margine spurio subelevato, ex substantia folii.

Genus 143. DRYOPHILUM, L. v. S., Novum Genus, an hujus loci? Peridium pezizaemorphum, sed omnino clausum, sessile aut papilla basilari stipitatum et folio affixum. Intus similare album. Extus vestitum cortice duriusculo.

*2465. 1. D. PEZIZOIDEUM, L. v. S., in foliis vegetis Quercus Banisteri et aliorum praesertim in montibus e. g. Mauch Chunk Coal mine. Etiam ex Georgia communicavit Leconte.
D. sparsum, cupulis 2—3 linearibus, orbiculatis, papilla basilari affixum, disco ime depresso nigrescenti. Cortice externo fibris crassiusculis densis arcte adpressis subtus albidis tecto. margine et extus eleganter spadiceo-sericeis.

*2466. 2. D. UMBONATUM, L. v. S., etiam in folio querneo communicavit Leconte ex Georgia.
D. sparsum, minus, folio subinnatum, cortice exteriori non fibroso sed glabro, ex rufo splendente spadiceo. Disco in umbonem elevato. Vix lineam excedens diametro.

Genus 144. Spermodermium.

In decorticatis ramulis Mori albae adhaerens fibris epidermidis aut corticis, Bethl.

*2467. 1. S. rufum, L. v. S.

S. minutum, ovato-oblongum aut potius elongatum, aut difforme, sparsum ac confluens, tenue, luteo-rufum, 1—2 lin. longum, semilineam latum. Intus pallidum. Primum molle, demum durinsculum. An Sclerotium? Certissime non Sphaeriae conceptaculum, v. Fr. Sys. Veg. p. 159.

Genus 145. Spermoedia.

*2468. 1. S. *Clavus*, F. p. 268, n. 2, rarius in frumento Pennsylv. Vulgo anglice audit "Ergot." Morbositas.

Tribus 4. Perisporii.

Genus 146. Erysiphe (Alphitomorpha). Link. Syst. I.

*2469. 1. E. *fuliginea*, Link. Syst. Lin. p. 102, n. 3. Frequens in Sanguisorba canadensi, Bethlehem. An eadem cum fungo europaeo? Habitus videtur alienus a speciminibus nostris europaeis in Veronica-spicata.

*2470. 2. E. *labiatarum*, Link. loco citato n. In Veronica serpyllifol. passim Bethl.

*2471. 3. E. *depressa*, Lk. n. 13, in foliis Silphii, Nazareth hort.

*2472. 4. E. *tortilis*, Lk. n. 14, in foliis variis Corni, &c. Bethl.

*2473. 5. E. *divaricata*, Lk. n. 17, in foliis Alni undulati prope Meadville in Pennsylv. occidentali.

*2474. 6. E. *communis*, Lk. n. 3, var. *graminum*, freq. Bethl.

*2475. 7. E. *orbicularis*, Lk. n. 21, in foliis Castancorum, ibid.

2476. 8. E. *guttata*, Lk. n. 22, Syn. Car. 315, Sclerotium erysiphe in foliis Coryli, Salem et Pennsylv.

*2477. 9. E. *obtusata*, Lk. 2, frequens in foliis Salicum, Bethl.

*2478. 10. E. *betulina*, Ignoto auctore. Specimina sub hoc nomine exacte nostris congrua ex Germania, et. Bethl.

*2479. 11. E. densissima, L. v. S.

N. B. Et in americanis regionibus multae occurrunt species primo obtutu distinctae, sed difficiliter plerumque verbis diagnosticis describendae. Sequentes mihi innotuerunt praestantiores ac, loco adhibito, facilius distinguendae, quarum prima,

E. densissima jam citata rarior in foliis quercinis, Bethl.

E. Hyphasma densissimum tomentum filamentoso-himantioideum, filis robustis, eleganter orbiculatim effiguratum sistit, a semi-uncia ad duas uncias effusum, filis candido-lacteis intertextis in ambitu subradiantibus. Sporangia globosa, nigro-fusca, crebra.

*2480. 12. E. Liriodendri, L. v. S., in foliis dejectis Liriodendri non vulgaris, Bethl.

E. Hyphasma densum lacteum, filis intertextis radiantibus maculas efficiens minores, vix ¼ unciales, orbiculatim aut effiguratim effusas. Sporangiis aggregatis fusco-nigris in centro, deciduis.

*2481. 13. E. Gerardiae, L. v. S., rara, sed distinctissima in foliis Gerardiae quercifol. Salem.

E. Hyphasma e sulphureo-olivaceum, filis tenuissimis efficit maculas irregulariter effusas minores, interdum subeffiguratas, confluentes. Sporangiola, absque capillitio gregaria in hyphasmate, globosa, demum pezizoidea nigro-fusca. Floccis hyphasmatis primo juventute epidermide folii tectis, demum nudis.

*2482. 14. E. Ceanothi, L. v. S., frequens in foliis Ceanothi pagina superiori, autumno Bethl.

E. Hyphasma candidum, filis vix lente distinguendis, farinae ad instar indeterminatim in foliis effusum. Sporangiis minutis immersis nigro-nitidis.

*2483. 15. E. Viburni, L. v. S., in foliis Viburni prunifolii, Bethl.

E. Hyphasma effusum, maculas efficiens majores aut minores lacteas, floccis crassiusculis intricatis, subeffiguratas. Sporangiola lutea, demum fusca aut nigra sphaerica, et collapsa, superficie subrugosa

*2484. 16. E. Ambrosiae, L. v. S., vulgatissima autumno in foliis Ambrosiarum, Bethl.
E. Hyphasma candidum, tenuissimis floccis vix distinguendis, indeterminatim latius effusum in toto folio. Sporangiolis sphaericis, fuscis nigrisque, raris, capillitio majoribus.

*2485. 17. E. Verbenae, L. v. S., vulgatissima sero autumno in foliis Verbenae urticifoliae, Bethl.
E. Hyphasma laxissimum indeterminatim effusum, maculas tamen efformans confluentes et subdeterminatas candidas. Floccis intertextis brevibus. Sporangiolis destitutis capillitii fuscis nec nigris, rugosis, deciduis.

*2486. 18. E. Quisquiliarum, L. v. S., super folia caulesque variarum herbarum dejectarum inter quisquilias horti, Bethl.
E. Hyphasma indeterminatim effusum, albido-virens, floccis intricatis. Capillitio parco. Sporangiolis crebris rugosis, nigris, globosis.

*2487. 19. E. Phlogis, L. v. S, non rara in foliis Phlogis undulatae Hortorum, Bethl.
E. Hyphasma albo-cinereum, maculas efficiens subindeterminatas aut orbiculatas. Floccis laxis intricatis. Sporangiolis minutissimis in hyphasmate subimmersis.

*2488. 20. E. Syringae, L. v. S., in foliis Syringae et Cydoniae Hortorum, Bethl.
E. Hyphasma tenuissimum candidum laxe et indeterminatum effusum—floccis vix distinguendis singulis. Sporangiolis sparsis, minutissimis, fuscis et nigris.

*2489. 21. E. Asterum, L. v. S., frequens in foliis languescentibus Asterum, praesertim Asteris paniculatae, Bethl.
E. Hyphasma tenue, album, laxum, indeterminatim effusum. Sporangiolis suffultis brevi capillitio, nigris.

*2490. 22. E. Chelones, L. v. S., vulgatissima autumno in foliis Chelones, Bethl.
E. Hyphasma crassiusculum albidum, demum pallidum orbiculatim effiguratum, floccis radiantibus subpulverulentis. Sporangiolis nigris centro aggregatis.

*2491. 23. E. Vaccinii, L. v. S, in foliis Vaccinii pennsylvanici, Berks County, Pennsylv. et passim in montibus. Distinctissima specie.
E. Hyphasma densum ex albido cinerascens, occupans fere totum folium, pagina superiori. Sporangiolis fuligineo-fuscis, demum atris, minutis, crebris, primum globosis, demum pezizoideis, corrugatis aut rugulosis.

*2492. 24. E. quercinum, L. v. S., sero autumno non rara in foliis quercinis praesertim Bannisteris, Pennsylvania.
R. Hyphasma occupans fere totum folium—expansum candicans, tenuissimum, floccis vix distinctis. Sporangiolis raris, minutissimis, sparsis nigris. Praesertim loco distinguenda species.

*2493. 25. E. *lamprocarpa*, Lk. n. 9, in Menthis et similibus monte Pocono.

*2494. 26. E. Mors uvae, L. v. S., cum proxima, loco insigni, nempe in fructubus inventa. Species nostra quidem in uvis Grossulariae *uvae crispae*, varietate illa nota, anglica, in Hortis culta, tam vulgatissima in interiori Pennsylvania et quidem Bethlehemis, et tam lethalem morbum lis infert, ut hortulani vix valeant nisi tempore faustissimo hos fructus deliciosos educare apud nos. Antequam maturitatem nempe in illis nascens tomento aut hyphasmate suo, ita eos circum circa investit atque constringit ut enecantur nec possunt comedi. Quibusdam, equidem plurimis annis vix singulam uvam invenies illaesam ab hoc hoste.
E. Hyphasma densissime intertextis filis compositum, crassiusculum, primum omnino, demum in margine tantum album—medio eleganter et sub lente sericeo-fuscobrunneum, inducns uvas pelle satis crasso. Sporangiolis minutis, crebris, sparsis, atris, applanato-globosis, rugosis, interdum supapillatis, primum pelle omnino immersis et tectis, demum emergentibus et hyphasmate laxiter insidentibus, immo fere liberatis. Saepissime sterile hyphasma occurrit, uva nempe consumpta aut exsiccata decidua, ante evolutionem sporangiolorum.
Fungum hunc memorabilem in horto meo diu observatum, primo pro Sphaeria habitum, denique certior certius factus sum Erysiphen esse.

*2495. 27. E. necator, L. v. S., multo rarius in Uvis Vitis labruscae varietatibus cultis in vineis nostris.
E. Hyphasma, tenuissimum albidum, floccis valde tenuibus, orbiculatum, non constringens. Sporangiolis minutissimis—raris fusco-nigris, globosis. Ubi omnino evoluta, etiam haec species destruit uvas.

Genus 147. Perisporium. F. Syst. Veg.

*2496. 1. P. Caladii, L. v. S., Syn. Car. 316, F. Sclerot., in Aro virginico.

*2497. 2. P. *speireum*, F. Sclerot., in foliis Rosarum Bethl. passim.

Classis Quarta. HYPHOMYCETES, Lk.

Nota.—Diu anceps fui an recensione sequente Fungorum americanorum ex ultimo cohorte Friesii, *Coniomycetes* ejus, cum plerisque *Byssaceis* ex ejusdem Cohorte secunda *Algarum* complectente, an Auctorem, certissime in hisce organismis scrutatorem acutissimum, melius sit sequi, quam quod demum factum, Linkii methodum adoptare. Post studium nempe assiduum Systematis vegetabilium Friesii mihi delectissimum, virum ingeniosum ime penetrasse in adyta naturae, viamque aperuisse ad Systema philosophicum et perfectum, et nisi in paucis excipiendis, minoris momenti, omnino observationibus meis per tot annos collectis consentivisse, omnino persuasus maneo. Interea autem non minus certum Linkium clarissimum, primum principia eruisse, et auctorem esse fere omnis horum vegetabilium cognitionis. Systema ejus non contemnendum, et ad praesens nostrum propositum bene adaptatum, species et genera nempe a me regionibus americanis observata recensendi, et nova describendi, non novum systema condendi aut emendandi, eo melius, quia species numerosas in opere "Species Plantarum Linnaei a Linkio continuatae ex Editione Willdenowii" recensuit—nullas autem Friesius. Complectens etiam inter Fungos, plantas quas Friesius, me non dissentiente, ad Algas Byssaceas amandat, aut quibus, plerumque summo jure, Friesius characterem vegetabilium autonomorum denegat, de quibus in America a me observatis tamen scientiae prodest, cognitionem non praetermittere—denique Linkium sequendum optimum censui, hoc libello—semper tamen Friesii observationibus non omissis. Futuri tum Systematici, quod alio loco, aut alio ordine tribuendum aptiori inserere competentes sunt.

Series I. (Trichomyci, Fr.).

Genus 148. Sporotrichum.

Genus Linkianum *Sporotrichum* Friesii pag. 185, et *Trichosporum*, p. 306, ex Byssaceis et verisimiliter Mycelia quaedam p. 215, complectet, quod in singulis notandum, quantum valeo.

Subgen. 1. SPOROTRICHA.

1. *Sporidiis albis.*

*2498. 1. S. *laxum*, Link. I. n. 1, truncis non rarum, Bethl.
*2499. 2. S. *candidum*. Lk. n. 2, putridis truncis, ibid.
*2500. 3. S. *obducens*, Lk. n. 3, corticibus passim, Bethl.
*2501. 4. S. *polysporum*, Lk. n. 4, insuper folia putrida, Bethl.
*2502. 5. S. *nitens*, Lk. n. 5, in dejectis foliis Syringae, Betbl.
*2503. 6. S. *stromaticum*, Lk. n. 6, in caulibus putridis, ibid.
*2504. 7. S. *pellicula*, Lk. n. 7, in caulibus putrescentibus, ibid
*2505. 8. S. *fructigena*, Lk. n. 8, in putridis pomis Bethl.
*2506. 9. S. *fungorum*, Lk. n. 9, in variis fungis Bethl.
*2507. 10. S. *densum*, Lk. n. 10, in emortuis insectis et fungis, ibid.
*2508. 11. S. *epiphyllum*, Lk. n. 15, in foliis effusum, Betbl.
*2509. 12. S. intertextum, L. v. S., ad truncos quercinos longe ac late, pedali longitudine interdum effusum, Bethl.

S. thallo latissimo, effuso, ligno arctim sed separabiliter adpresso, e floccis intertextissimis, ita ut possit detrahi quanquam tenuissimo, ambitu subdeterminato et ibid. fibrillulosim diviso, albido. Sporidiis non primo a floccis velatis, densissimis globosis, candidis.

*2510. 13. S. Himantiae, L. v. S., in caulibus v. c. Zeae passim effusum, Bethl.

S. thallo candidissimo, Himantiae ad instar, vulgo sic dictae, expanso. Floccis plerumque transversis, subparallelis parum intertextis: ambitu effigurato. Sporidiis nudis creberrimis globosis candidis conglomeratis inspersis.

*2511. 14. S. COHAERENS, L. v. S., in epidermide putridissima ramorum Castaneorum, ad longitudinem bi vel tripedalem effusum, Bethl.

S. thallo longe lateque effuso candido, ex floccis crassis tam firmis contexto, ut faciliter thalli fragmenta tanquam pellis detrahantur, ambitu tamen flocci tenuissimi lanosi et quasi fimbriatum radiantes observantur. Sporidiis nudis conglomeratis, candidissimis densim impositis farinae ad instar, adhaerentibus nec faciliter detergibilibus.

*2512. 15. S. SOLUBILE, L. v. S., rarius inter folia dejecta copia aggregata, longe lateque ea investiens. Omnium distinctissimum, Bethl.

S. thallo crasso, interdum crassitie duarum linearum, e floccis firmis crassiusculis tam densim contexto, ut facillime omnino detrahetur, pellem referente, similem fragmento chartae bibulae, ambitu determinato, candido. Sporidiis rarioribus floccis adhaerentibus, minutis, non aggregatis nec unquam velatis. Ad longitudinem plurium unciarum super folia effusum, quae inde connexa—locis siccis—sed in suffocatis.

Species 15 jam recensitae, novae nostrae saltem—ad *Trichosporum* Byssaceum sec. Fries. pertinent.

*2513. 16. S. *sporulosum*, Lk. n. 16, in Brassicae caulib. Bethl.

*2514. 17. S. *agaricinum*, Lk. n. 17, frequens in Agaricis, ibid.

*2515. 18. S. *inquinatum*, Lk. n. 11, in merda Bethl. Hae tres Sporotricha sunt, Friesii.

2. *Sporidiis griseis.*

*2516. 19. S. *griseum*, Lk. n. 18, in caulibus mihi ex New York communicatis ab amico Halsey.

*2517. 20. S. *murinum*, Lk. n. 19, Bethl. In terra et lignis mense Augusto ambo videntur cum proximo Sporotricho Friesii.

*2518. 21. S. *fuliginosum*, Lk. pag 9, n. 2, passim et caespitulis confluentibus late extensum intra folia glumacea putrida Zeae, Bethl. Interdum occupat fere totam superficiem internam, quanquam thallus unius cujusque caespitis minor. Floccis junioribus albidis Sporidiis griseis et fuligineo nigris.

3. *Sporidiis flavicantibus.*

*2519. 22. S. *luteo-album*, Lk. n. 20, etiam in pomis putridis Bethl. *Sporotrichum*, Fries.

*2520. 23. S. *laetum*, Lk. n. 21, in fissuris ligni caesi, Salem et. Bethl. *Sporotrichum*, F.

*2521. 24. S. *flavissimum*, Lk. n. 22? non in asseribus sed inter folia conglomerata et glumas putrescentis Zeae nobis notum. *Sporotrich.* F.

*2522. 25. S. *vitellinum*, Lk. n. 23. In asseribus Salem ac Bethlehem. Idem, F.

*2523. 26. S. *sparsum*, Lk. n. 25. Nobis innotuit in cupulis glandium subputridis, Bethl. *Sporotrich.* F. (Sporotrichum Pulveraria, Lk. n. 26, apud non vulgare sed evidenter Alga, vide Fries. p. 313.)

*2524. 27. S. ALUTACEUM, L. v. S., longe lateque effusum in cortice Vitis putrido, Bethl.

S. thallo indeterminatim effuso, alutaceo-subolivascente, e floccis laxe et quasi reticulatim intertextis, crassiusculis, arctim cortici adpressis. Sporidiis concoloribus nudis inspersis. *Trichosporum*, Fries. Byssaceum.

*2525. 28. S. LUTESCENS, L. v. S., rarius occurrit in corticibus, Bethl.

S. thallo determinatim effuso oblongo e floccis densis intertextis lutescentibus. Sporidiis globosis, concoloribus. Affine S. candido et obducente, colore distinctissimo. *Trichosporum*, F.

4. *Sporidiis fuscis.*

*2526. 29. S. *fusco-album*, Lk. n. 27. Non rarum in corticibus Bethl. *Sporotrichum*, F.

5. *Sporidiis roseis.*

*2527. 30. S. *cylindrosporium*, Lk. n. 33, in cortice Betulae ex Massachusetts communicavit Cl. Torrey. *Sporotrichum*, F.

*2528. 31. S. *anthochroum*, Lk. n. 33, 1, in Salice cavo passim Bethlehem. Videtur mihi esse species generis Friesiani Byssacei Hypochni, pag. 304. Certissime vegetabile distinctum.

*2529. 32. S. INCARNATUM, L. v. S., in cariosissimo ligno molli dejectorum ramorum Liriodendri aut talius, Bethl. *Trichosporum*, F.

S. thallo indeterminatim longe effuso, satis crasso lanoso, submolli, floccis intertextis, albido-incarnatis.

Sporidiis dense inspersis, nudis et floccis adhaerentibus rosco-incarnatis, demum expallentibus. Pellem laxum sistit ad 2 uncias effusum.

*2530. 33. S. GRATUM, L. v. S., in epidermide corticis quercini et in lignis late expansum, Bethl. *Trichosporum*, F.

S. longe lateque effusum, thallo ambitu subdeterminato expallente; floccis densissime intertextis arcte adpressis, unde superficies laevigata apparet. Sporidiis creberrimis roseis adhaerentibus, globosis onustum. Colore praesertim differt a S. obducente.

6. *Sporidiis rubris et aurantiacis.*

*2531. 34. S. *aureum*, Lk. n. 34. Colore apud nos potius fulvo-rubro gaudet. Frequens Bethl. in putridissimis corticibus et lignis.

*2532. 35. S. *mycophilum*, Lk. 35. Rarius in maximis Pezizis putridis, Bethl.

*2533. 36. S. *lateritium*, Lk. 36, in fibris corticalibus ramorum Castaneorum, Bethl.

*2534. 37. S. VITICOLA, L. v. S., in rimis corticis Vitis exsoleti, Bethl.

S. thallo longitudinaliter ad 2—3 uncias effuso pallido, e floccis basi in membranulam aut pelliculam contextis, ceterum autem suberectis et sublanosis quanquam intertextis, superne onustis creberrimis sporidiis rubris ac lateritiis, nullimodo unquam velatis. *Trichosporum*, F.

7. *Sporidiis virescentibus.*

*2535. 38. S. *virescens*, Lk. n. 38, (Dematium Pers. Synops.) rarum in corticibus, Salem et Bethl.

*2536. 39. S. *chlorinum*, Lk n. 39, in foliis dejectis rarum, Bethl.

*2537. 40. S. *flavovirens*, Lk. n. 40, in truncis Bethl. Linkius, loco citato, in Sistotremate aeruginoso sibi pro amicissimi Albertini et mei fungo sic dicto, misso, Sporotrichum recognovit flavovirens. Nullimodo tam accurato observatore contradicere in animo est. Sed pro certo possum habere, fungum ab Linkio sub hoc nomine acceptum non revera fuisse Sistotrema nostrum, id est n. 563 hujus libelli, quod Hydnum distinctissimum.

*2538. 41. S. *bombacinum*, Lk. n. 41, in truncis, Bethl. De hac specie mihi verosimile est—Mycelium tantum esse nec fungus autonomus.

*2539. 42. S. AERUGINOSUM, L. v. S., an *Hypochnus* Fries. Byssaceum frequentissime occurrit Salem et Bethl. in truncis putridissimis jacentibus.

S. thallo sublimitato effuso, maculas unciales et biunciales efficiente, e floccis lanosis intertextis in ambitu laxioribus, pulcherrime aeruginosis, centro fere tenuissimam membranulam sistentibus, qua aggregata sunt sporidia creberrima concolora, conglomerata. Omnino differt a Thelephora, n. 687.

8. *Sporidiis vinosis, purpureis.*

*2540. 43. S. SUBVINOSUM, L. v. S. *Trichosperma*, F. in truncis sub cortice non rarum, Bethl.

S. thallo crassiusculo, lanoso, subdeterminatim effuso, e floccis laxe intricatis aut intertextis, vinoso-purpurascentibus, demum grisescentibus. Sporidiis concoloribus crebris non primum velatis, adhaerentibus floccis.

9. *Sporidiis nigris.*

*2541. 44. S. *Collae*, Lk. 45, in colla corrupta, Bethl. frequens.

*2542. 45. S. *lyococcon*, Lk. 44, in corruptis tuberibus Convolvuli Batatas prope Camden.

SUBGEN. 2. BYSSOCLADIUM.

*2543. 46. S. *fenestrale*, Link. 46, rarissime Pennsylv. observatum in vitro fenestrali cellarum.

*2544. 47. S. *byssinum*, Lk. 47, in foliis dejectis non rarissime occurrit, Bethl.

*2545. 48. S. *Tela*, Lk. 48, in foliis et interdum in cortice effusum, Bethl. Thallus non tenuissimis, sed manifestis floccis compositis. An fungus Linkii.

Genus 149. CAPILLARIA. Lk. et Pers. in Myc. Europ.

De hoc genere ambo dubitant Link. et Fries. nec autopti videntur ullius specici. Sequentes ipse frequenter observavi locis indicatis. Species tres priores pro fungis hujusce locis, sine dubio sumendae intra caulium cavitates et medulla nidulantes. Tres ultimae valde dubiosae. C. epidermidis et

C. grammica, vix autonomi fungi—et tantum ideo hic recensuntur, quia mihi non sine momento in his dijudicandis videtur, Mycologis notum esse, quidquid horum Myceliorum aut Initiorum etiam apud Americanos occurrit. C. *Rhizomorphinam*, nobis—potius forsan Rhizomorpha vera, vegetabile memorabile et frequens observatum non omittendum censeo—quanquam non ad tres priores pertinet.

*2546. 1. C. *Phytolaccae*, Lk. p. 22, n. 3. Vulgatissima loco citato in Pennsylvania et Carolina. Floccis etiam saepius fuligineis, sporidiis minutissimis sed crebris. In tribus speciebus genuinis mihi notis, solum est et quantum scio sine exemplo mos crescendi. Nam non ut reliqui fungi familiae effusi sunt in planitie unica, sed tanquam sphaerice ex centro, irregulari quidem sed distinguendo, radiantes (fere ut constructio interior Gallarum majorum Quercus se oculis ostendit); Floccis ceterum laxissimis. Ubi caulis omnino cavus et medullae ac dissepimentorum expers—magis horizontaliter aut planitiem laterum interiorum sequentes inveniuntur.

*2547. 2. C. *caulincola*, Lk. p. 23, n. 8, Bethl. non rara in caulibus Umbellatarum, v. c. Pastinacae, &c. et Angelicae lucidae praesertim.

*2548. 3. C. Malvacearum, L. v. S., in interiori caule Malvarum majorum hortis nostris.

C. Floccis atris laxis subsphaerice et reticulatim expansis in lateribus et per medullam, ramosissimis, maculas efficientibus saepe plus quam unciales. Sporidiis non raris. Colore et magnitudine a C. Phytolaccae differt.

*2549. 4. C. *epidermidis*, Lk. n. 5, vix dubitandum ut sit merum Mycelium, an Agariculi. Frequens Bethl.

*2550. 5. C. *grammica*, Lk. n. 6. Frequens in foliis quercinis quibusdam annis. Nil autonom.

*2551. 6. C. Rhizomorphina, L. v. S., an *Haplotrichum* Eschv. frequens observatur in Lichenibus crustuosis ramorum, v. c. in Lecideis, Lecanoris, &c. Bethl. et Salem.

C. Floccis subsparsis, ramulosis, nigro-fuscis, minutissimis suberectis aut repentibus—crassiusculis, nitentibus—Oculis nudis vix perceptibilibus. Ramulis brevibus, raris.

Genus 150. Alytosporium, Lk.

Non omnino clarissimi Friesii sententiae Alytosporia Mycinematibus adnumeranda, p. 312, consentire possum. Quos sub hoc genere intelligo, fungi autonomi, videlicet.

*2552. 1. A. *fuscum*, Lk. n. 1. Colore valde vario non rarum apud nos Bethlehemis.

*2553. 2. A. *psittacinum*, Lk. n. 4, rarius occurrit ad ramos Bethl. Minutum plerumque.

*2554. 3. A. *murinum*, Lk. n. 5, passim in truncis Bethl. At duae reliquae species, si teneo easdem quas observavit, certissime non hujus luci sunt; videlicet

*2555. 4. A. *fulvum*, Lk. n. 2, evidenter species bona generis Friesii Byssacei *Hypochni*, pag. 304, rarius Bethl.

*2556. 5. A. *croceum*, Lk. n. 3, ejusmodi species. Himantia nempe *sulphurea* Persoon optime evoluta et eadem quae Syn. Car. 1364 recensita.

Genus 151. Colletosporium. F. S. V. inter Byssaceos, p. 304.

*2557. 1. C. *umbrinum*, Lk. p. 25, n. 1, sub cortice putrido, Bethl.

*2558. 2. C. *atrum*, Lk. n. 2, β purpurascens, densim investiens ramos truncosque Smilacis rotundifolii, Bethl. Vix specie distinguenda ob colorem atropurpurascentem ab *atro*.

Genus 152. Coccotrichum. Vide F. S. V. p. 365.

*2559. 1. C. Martii, Lk. n. 1, apud nos in trunci interiori latere, super excrementa insectarum conglutinata effusum.

*2560. 2. C. erubescens, L. v. S., Salem in dejectis asseribus putridis observatum, prioris congener.

C. Thallo sublimitato, effuso, confluente ex caespitulis numerosis subglobosis floccorum, griseo rubescentibus. Sporidiis concoloribus, adeo magnis, creberrimis. Interdum occupat plagas semipedales et ultra.

Genus 153. Racodium. F. S. V. p. 304, Byssaceum.

*2561. 1. R. *cellare*, Lk. n. 1, in doliis cellarum in taberna, Bethl.

Genus 154. Acrothamnium.

*2562. 1. A. *violaceum*, Lk. p. 27, n. 1, elegantissimum ac contra Friesium manifestim autonomon. Nostrum nullimodo inter muscos crescit—sed magna copia inventum ubi via sylvatica novissima, per latera collium excavata, multos radiculos arborum vicinitatis subdenudavit, in his.

Genus 155. Trichothecium. S. V. F. p. 185.

2563. 1. T. *roseum*, Lk. p. 28, n. 1, Syn. Car. Trichoderma roseum n. 517. Vulgaris in plantis et in ramulis. Praesertim Robiniae et Bethl.

Genus 156. Sepedonium. S. V. F. p. 185.

2564. 1. S. *mycophilum*, Lk. p. 29, n. 1, Syn. Car. 515, vulgaris in Boletis etiam Pennsylvania.

Genus 157. Mycogone. S. V. F. p. 178.

*2565. 1. M. *rosea*, Lk. p. 29, n. 1, in Polyporis vetustis praesertim in P. sulphureo, Bethl.
*2566. 2. M. *cervina*, Lk. n. 2. Lectum ingenti copia sed rarissime in Peziza suffocata, Bethl.
N. B. Non displicet sententia Friesii mycogones suis Acremoniis potius adnumerare.

Genus 158. Fusisporium. S. V. F. p. 186.

*2567. 1. F. *aurantiacum*, Lk. p. 30, n. 1. In Zeae caulibus ac spicis, Bethl.
*2568. 2. F. *roseum*, Lk. n. 2. In capsulis Sidae abutilon et in foliis glumaceis Zeae, Bethl.
*2569. 3. F. *candidum*, Lk. n. 3, apud nos in foliis dejectis, Bethl.
*2570. 4. F. Lagenariae, L. v. S. Verrucas exsoletorum Cucurbitarum lagenariae albo-investiens, Bethl.
F. thallo satis crasso e filis contexto ramosis, candidis, aqua diffluentibus, immixtis sporidiis inseptatis cylindricis, minutis.

Genus 159. Menispora. (Macrosporium, F. p. 182.)

*2571. 1. M. *glauca*, Lk. p. 31, interiori paginae corticis deject. Bethl.

Genus 160. Gonytrichum. (F. S. V. p. 306, *Byssaceum.*)

*2572. 1. G. *caesium*, Lk. p. 32, ad frustula corticis Vitis, Bethl.

Genus 161. Epochnium. F. S. V. p. 186.

*2573. 1. E. *monilioides*, Lk. p. 32. Apud nos Bethl. ad uvas cultas passim occurrit.

Genus 162. Helicotrichum. F. S. V. p. 305, *Byssaceum.*

*2574. 1. H. *pulvinatum*, Link. p. 33. Fungus noster bene quidem conveniens, ad caules stipitesque putrescentes occurrit, nec hucusque in ligno. An nova species. Pulvinulis crebris confluentibus colore pulchro caesio. Historia ceterum omnino eadem, vide Lk. p. 33.

Genus 163. Bactridium. F. S. V. p. 180.

*2575. 1. B. *flavum*, Lk. p. 34, n. 1, frequens in lignis putridis praesertim salicis, Bethl.
*2576. 2. B. *carneum*, Lk. n. 3. Multo rarius Bethl.
*2577. 3. B. effusum, L. v. S., rarius in caulibus putridis plantarum, Bethl.
B. nigrofuscum, floccis frequentibus, subramosis, septatis, hyalinis. Sporidiis e globoso utrinque acutiusculis, subdifformibus, zona media intus materia grumosa repleta. Caespitibus elongato-confluentibus, demum induratis effusum.

Genus 164. Scolicotrichum. F. S. V. p. 182.

*2578. 1. S. *virescens*, Lk. p. 35, ramulos ignotos investiens rarum, Bethl.
*2579. 2. S. candidum, L. v. S., effusum super folia dejecta inter quisquilias corruptas, Bethl.
S. Thallo indeterminatim effuso, latissimo contexto ex floccis crispis vermiformibus, intricatis quidem, sed non ramosis, subnudis, satis crassis diaphanis inseptatis. Sporidia septata alba subdiaphana.

Genus 165. Circinotrichum. F. S. V. p. 182.

*2580. 1. C. candidum, L. v. S., in ligno deorbato putrido pineo, Salem.
C. thallo tenuissimo effuso, exacte congruo descriptione Linkii pagina 35—nisi colore. Floccis enim candidissimis, et nitoris expertibus. Nudo oculo lignum videtur farina adspersum.

Genus 166. Myxotrichum. F. S. V. p. 304, *Byssaceum.*

*2581. 1. M. *chartarum*, Lk. p. 36, n. 1. Non rarum in chartis muris tabernarum diu loco humido adglutinatis, ut solent in usum publici.

Series II. (Byssacei.).

Etiam in hac serie commixtos habemus fungos Friesiani Coniomycetes, Byssaceis ejusdem.

Genus 167. Acladium. F. S. V. p. 306, *Byssaceum.*

*2582. 1. A. *conspersum*, Lk. p. 37, n. 1, frequens ad truncos, Bethl.
*2583. 2. A. *microspermum*, Lk. n. 2, in ramis putridis ibidem.
*2584. 3. A. densissimum, L. v. S., ad truncos et asseres putridos, Bethl. rarum.
A. caespitulis densissimis uncialibus, effuso-pulvinatis griseo-canescentibus. Floccis persistentibus et sporidiis majusculis concoloribus.

Genus 168. Chloridium. F. S. V. p. 181.

*2585. 1. C. *viride*, Lk. p. 38, n. 1, in lignis putridis Bethl.

*2586. 2. C. *griseum*, Lk. n. 2, distinctissimum frequentius in cortice putrido, Bethl.
*2587. 3. C. CANDIDISSIMUM, L. v. S., ad ligna putrida Bethl. Fere omnino evanescens.
C. thallo omnium tenuissimo, floccis candidissimis sporidiis difformibus minutissimis. Fugax.

Genus 169. CLADOSPORIUM. F. S. V. Dematium, p. 188, quoad speciem unicam—cetera ad Byssaceas.

Nota.—Suspicor Friesium clarissimum non autoptim plurimas species vidisse. Nam plurimae evidenter congenerae C. herbarii, et tamen specifice distinctae sunt—et mihi videtur Genus ut omnium familiae feracissimum sic etiam optime distinctum et definitum; typo C. herbarum.

2588. 1. C. *herbarum*, Lk. p. 39, n. 1, ubique terrarum in plantis herbaceis, et in fungis, Syn. Car. 1341.
*2589. 2. C. *solutum*, Lk. n. 2, nobis frequenter obvium in caulibus Euphorbiae marginatae et Ricini. Colore juniore vivido, demum fusco, Bethl.
*2590. 3. C. *atrum*, Lk. n. 3, in caulibus firmioribus v. c. Brassicae vetustissimae, Bethl.
*2591. 4. C. *polysporum*, Lk. n. 4, in ramis salicinis non rarum, Bethl.
*2592. 5. C. *fuscum*, Lk. n. 5, in majoribus caulibus, ibid.
*2593. 6. C. *Fumago*, Lk. n. 6. Paulo abnorme. A me passim observatum in Carolina et Pennsylv. Quando obvium folia totius fruticis aut plantae in quibus effusum fere omnino occupat. Exsoletum est Fumago Persooni. Plerumque infestit plantas in vicinitate stagni sylvatici crescentes. Syn. Car. D. Fuligo, n. 1331.
*2594. 7. C. *tenerrimum*, Lk. n. 6, abnorme; non rarum et distinctissimum in cortice, Bethl.
*2595. 8. C. *fuscatum*, Lk. b. n. 1, passim ad caules, Bethl.
*2596. 9. C. *grumosum*, Lk. b. n. 2, solummodo in stipitibus Pteridis aquilinae, Bethl.
2597. 10. C. *epiphyllum*, Lk. b. n. 3, Syn. Car. 1327, vulgare et in Pennsylv.
*2598. 11. C. *graminum*, Lk. b. n. 4, vulgatissima Bethl. in foliis graminum.
*2599. 12. C. MACULANS, L. v. S., subtectum subepidermide Jasmini fruticantis in Horto, Bethl.
C. primum tectum epidermide, efficiens maculas majusculas, expallentes subelevatas; demum prorumpens acervulis minutis rotundis aut elongatis confluentibus epidermide fisso cinctis. Floccis minutissimis cum sporidiis fusco-olivaceis. Acervulis plerumque in maculis concentrice dispositis antequam confluunt.
*2600. 13. C. BIGNONIAE, L. v. S., frequens in leguminibus Bign. radicantis ac Catalpae, Carolina et Pennsylv.
C. acervulis sparsis, minutis, frequentibus, sphaeriaeformibus, nigro-olivaceis. Floccis breviusculis cum sporidiis concoloribus.
*2601. 14. C. LIGNATILE, L. v. S., passim in ligno putrido, Bethl.
C. late effusum, ad 2—3 uncias, tenue. Floccis densis nudo oculo vix discretis, brevissimis, ramosis, cum sporidiis atro-aeruginosis, demum fuscis, aut fusco-purpurascentibus.
*2602. 15. C. SPARSUM, L. v. S., in scapis Allii Cepae et aliorum, Bethl.
C. sparsum in acervulis minutissimis badio-fuscis per maculas expallentes latas scapi. Floccis crassiusculis rarioribus acervulos efficientibus, subdivergentibus; sporidiis subglobosis concoloribus crebris inspersis.
*2603. 16. C. TYPHAE, L. v. S., rarius observatum in foliis exsoletis Typhae, Bethl.
C. Floccis vix in acervulos aggregatis, sed sparsis, interdum et in ambitu fere simplicibus—plerumque autem approximatis, ita ut e longinquo maculam minutam efficiunt, nigro-fuscescentibus. Sporidiis majusculis inspersis concoloribus.
*2604. 17. C. IRIDICOLA, L. v. S., in foliis exsoletis Iridis virginicae, Bethl.
C. minutissimum, sparsum, acervulis nempe non confluentibus, quanquam e longinquo maculam sistunt latiusculam ob approximationem. Floccis brevibus, cum sporidiis, fusco-nigris. Acervulis floccorum exsoletis, quasi sphaeriaemorphibus.
*2605. 18. C. VIRGULTORUM, L. v. S., passim in ramulis, virgultisve tenerioribus semivirentibus, Bethl.
C. late effusum, confusum et acervulis non discretis, ambiens ramulos quasi tomento crustuoso, nigro. Floccis demum vix distinguendis—sporidiis inspersis autem majusculis, globosiusculis, copiosis, et atro-inquinantibus.
*2606. 19. C. SIMPLEX, L. v. S., in foliis dejectis fraxineis rarum, Bethl.
C. floccis simplicibus, nigris, fere omnino septatis, ceterum in aversa pagina tam approximatis, ut

sistent maculam parvam, tenuissimam. Ceterum erectis, minutissimis. Sporidiis adhaerentibus, satis crebris, et ad basin floccorum hinc inde dispersis, concoloribus.

*2607. 20. C. EPISPHAERIA, L. v. S., satis frequens insuper varias Sphaerias corruptas, Bethl.

C. fugacissimum, ita ut statu sicciore omnino evanuit. Descriptione perdita quam in recentiori feci tamen pro futuro examine loco nominandum censui.

Genus 170. PODOSPORIUM, L. v. S., Novum Genus.

Floccis rigidis crassis, basi incrassatis, apice obtusis undique Sporidiis majusculis pedicellatis obsitis, ceterum ramosis aut simplicibus.

2608. 1. P. RIGIDUM, L. v. S., Syn. Car. (Demat. crucigerae) 1325, pasim occurrit ramos aut sarmenta Rhois radicantis circum circa (more Helminthosporii velutini) investiens, plerumque copia magna et plusquam $\frac{1}{6}$ unciae elongatis floccis. Frequens etiam Bethl.

P. Floccis rigidissimis simplicibus erectis distantibus aterrimis, subfragilibus, opacis, saepe longitudine sex-unciali et ultra occupantibus ramos. Sporidiis ovato-elongatis aut subcylindricis, pedicellis divaricatis, brevioribus aut longioribus, et tum filiformibus.

*2609. 2. P. GLANDICOLA, L. v. S., in cupulis glandium aut interdum in glandibus ipsis semiputridis ad terram dejectis, Bethl.

P. subfasciculatum, brevissimum, atrum; dense aggregatis floccis rigidis, ramosis, brevissimis (i. e. quando priori comparantur) Aterrimum. Sporidiis pro ratione magnis, pedicellatis, sed non divaricatim insertis. Fasciculus minutus—quasi versus basin incrassatus apparet.

Genus 171. OEDEMIUM. F. S. V. p. 306, *Byssaceum!*

*2610. 1. O. *atrum*, Lk. p. 42, n. 1, in arborum cortice, Bethl.

Genus 172. POLYTHRINCIUM. F. S. V. p. 188.

*2611. 1. P. *Trifolii*, Lk. p. 43. Rarissime sed distinctissimum in foliis Trifolii repentis, Bethl.

Genus 173. ARTHRINIUM. F. S. V. p. 187, cum proximis.

*2612. 1. A. *caricicola*, Lk. p. 43, in Carice quaedam monticola rarius prope Nazareth inventum.

Genus 174. CAMPTOUM. F. S. V. p. 187, vide p. 365.

*2613. 1. C. *curvatum*, Lk. p. 44, in culmis Scirpi lacustri, Bethl.

Genus 175. GONIOSPORUM, ut supra.

*2614. 1. G. *puccinoides*, Lk. p. 45, rarius in foliis Caricis crinitae, Bethl.

Genus 176. SPOROPHLEUM, ut supra.

*2615 1. S. *gramineum*, Lk. p. 45, solummodo obvium in foliis Zizaniae in Delaware prope Philad.

Genus 177. CONOPLEA. F. S. V. p. 187.

*2616. 1. C. *hispidula*, Lk. p. 46. mihi obvium in Panicis rarius, de Horto Bartrami Philad.

Genus 178. Coelosporium. F. S. V. ad proximum.

*2617. 1. C. *fruticulosum*, Lk. p. 46, non rarum in exsoletis foliis gramineis, Bethl.

Nota.—Gratissimum mihi fuit, fere omnia haec genera Cl. Linkii, gaudentia tam distinctis characteribus, quanquam plerumque minutissima, etiam in nostris regionibus invenire. Quis talia observans, possit adhuc suspicari, naturam in his organismis microscopicis; mere pro lubitu sibi lusum indefinitum vagumque permisisse—nec esse ullam fidem ac stabilitatem in eorum diagnosi. Ludit sane methodice, quum iisdem formis tam determinatis gaudet, cis et transatlantice.

Genus 179. Helminthosporium. F. S. V. p. 305, *Byssaceum.*

2618. 1. H. *velutinum*, Lk. p. 47, n. 1, Syn. Car. 1324, (D. ciliare) vulgatum in ramulis Carolinae et Pennsylv.

*2619. 2. H. *subulatum*, Lk. n. 2, Bethl. in ramis.

*2620. 3. H. *minus*, Lk. n. 3, rarius in ramis, Bethl.

*2621. 4. H. *nanum*, Lk. n. 4, in ligno putrido, ibid.

*2622. 5. H. *pellucidum*, Lk. n. 5, non rarum in ramis, ibid.

*2623. 6. H. *simplex*, Lk. n. 6, in ligno salicino, Bethl.

*2624. 7. H. *tenuissimum*, Lk. n. 7, in caulibus plantarum v. c. in exsoletis Aquilegiae hortorum, Naz.

2625. 8. H. fasciculatum, L. v. S., Syn. Car. 1326, (Demat. castaneae) frequens in variis foliis, Salem et Bethl.

H. fasciculis minutis gregatim propullantibus ex epidermide subfissa et subelevata, saepe collectis in maculam plus minus effusam. Floccis nigris simplicibus, plus minusve divergentibus, articulatim septis. Sporidiis crebris concoloribus.

*2626. 9. H. dubium, L. v. S., ex ramis propullans; affine priori, sed vix fasciculatum, Bethl.

H. floccis aggregatis, sed non in fasciculis, nigris aut nigro-subfuscescentibus, flexuosis, filiformibus, longiusculis articulatim septatis. Sporidiis minutis adhaerentibus.

*2627. 10. H. corticale, L. v. S., satis frequens in cortice glabrato ramorum Platani occidentalis, Salem et Bethl.

H. fasciculatum, propullans ex cortice. Floccis nigris, erectis vix ramosis, basi coalitis, apicem versus conniventibus, rigidis, ita ut fasciculus subconicus evadit. Sporidiis rarioribus, brevissimis, saepe extus griscescentibus.

*2628. 11. H. virgultorum, L. v. S., sub epidermide ramulorum Mori frigore emortuorum—demum denudatum, Bethl.

H. floccis aggregatis in maculam nigrescentem semiuncialem primum subepidermide, demum nudum; ceterum brevissimis tenerrimis fuscis, ramosis. Sporidiis concoloribus inspersis.

*2629. 12. H. crustuosum, L. v. S., longissime effusum, crustam teneram nigram in Catalpae ramis junioribus, Bethl.

H. floccis brevissimis simplicibus erectis nigris, tam densim aggregatis, ut videntur sistere crustam pedalem, in qua vix distinguuntur flocci, statu sicciori. Sporidia minutissima cum floccis confusa.

*2630. 13. H. herbarum, L. v. S., pulchrum, in caulibus Euphorbiae marginatae, Bethl. Dothideas, Sphaeriasque his incolas—obtegens.

H. subeffusum aut subpulvinatum. Floccis brevissimis basi intumescentibus, brunneis aut fuscis, minutis, densissime stipatis, pellucidis sub lente et septatis. Sporidiis inspersis.

*2631. 14. H. Sorghi, L. v. S., frequens in foliis putridis Sorghi culti Litiy.

H. pulvinulis minutis (linearibus) oblongis, crebris aterrimis, confluentibus. Floccis atris, rigidis erectis, densis, simplicibus, subacuminatis, articulatim septatis, Sporidiis concoloribus inspersis.

*2632. 15. H. Brassicola, L. v. S., in foliis Brassicae cellis asservatae, circum nervum centralem praesertim erumpens. Affine *tenuissimo.*

H. plagis irregularibus, nigro-fuligineis longe lateque effusis. Floccis longiusculis, junioribus erectis, ramosissimis hyalinis. Sporidiis oblongis multiseptatis, saepe incurvis, et pseudo pedicello interdum suffultis, ceterum frequenter clavatis, longitudine fere floccorum. Sporidiis effusis caulem inquinat.

*2633. 16. H. corniculatum, L. v. S., abnorme. E rimis corticis quercini recenter caesi rarius propullans, Bethl.

H. giganteum; aterrimum cum nitore quodam cinerascente; corniculatim ramosum versus apicem ramis divaricatis brevibus. Floccis crassis, fragillimis, densissime intricatis, longitudine unciali, pulvinulum efficientibus 2—3 uncialem, effusum longitudinaliter in rimis. Sporidiis rarioribus et tantum in perfectissimis, apice incrassatis.

Genus 180. Helicosporium.

*2634. 1. H. *vegetum*, Lk. p. 51, ligno putrescente inventum, Bethl.

Series III. (Mucedines.).

Genus 181. Haplotrichum. F. S. V. p. 184.

*2635. 1. H. *capitatum*, Lk. p. 52, in truncis Bethl.
*2636. 2. H. virescens, L. v. S., in cortice putrido ramorum, Bethl.
H. floccis effusis intricatis, ramosis, septatis, persistentibus fuscescentibus, sporidiferis erectis. Sporiforia ovalia ex sporidiis virescentibus.
*2637. 3. H. subpulvinatum, L. v. S., in truncis putridis cortice insidet, Bethl.
H. subpulvinatim aggregatum et interdum effusum. Floccis densis, divergentibus ramosulis, griseo-canescentibus intricatis, sporidiferis erectis. Sporidiis majusculis ovatis coneoloribus, apice collectis.

Genus 182. Haplaria. F. S. V. p. 184.

*2638. 1. H. *grisea*, Lk. p. 52. Optime quadrans—sed loco alieno. Apud nos solummodo in cortice inventa.

Genus 183. Botrytis. F. S. V. p. 184.

1.* *Albae.*

2639. 1. B. *ramulosa*, Lk. p. 53, n. 1, Syn. Car. 1306, *diffusa*, in putridis plantis et in lignis. In his minus fugax.
*2640. 2. B. *geotricha*, Lk. n. 3, vulgaris in terra, locis stagnorum sylvaticorum exsiccatis, Bethl.
2641. 3. B. *epigaea*, Lk. n. 2, in sylvis ad vias et declivitates. Est quod nobis olim Trichoderma tuberculatum audit. Syn. Car. 523, et. Bethl.
*2642. 4. B. *elegans*, Lk. n. 4, Nobis et in ligno obvia et tum asservabilis, Bethl.
*2643. 5. B. *densa*, Lk. n. 5, etiam in fungis, Bethl.
2644. 6. B. *agaricina*, Lk. n. 6, frequens praesertim in Polyporis. Syn. Car. *ramosa*, 1308.
*2645. 7. B. *epiphylla*, Lk. n. 7, satis frequenter observata in foliis Geranii maculati et carolinani, Bethl.
*2646. 8. B. pellicula, L. v. S., ad lignum vetustum, Bethl.
B. Thallo effuso, densissime intertexto, candidissimo, sistente pellem delicatum tenuissimum detractibilem. Floccis sporidiferis creberrimis erectis et decumbentibus, onustis caterva densa sporidiorum candidissimorum globosorum. Floccis ceterum eleganter ramosis. Sporidiis faciliter concussione avolantibus.

2.* *Virentes aut olivaceae.*

*2647. 9. B. *olivacea*, Lk. n. 7, in truncis putridis, Bethl.
*2648. 10. B. *pulvinata*, Lk. n. 8, in fungis vulgaris, ibid.
*2649. 11. B. *polyspora*, Lk. n. 9, in dejectis ramis, ibid.
*2650. 12. B. *cinereovirens*, Lk. p. 56, in ligno putrido, ibid.

*2651. 13. B. *lignifraga*, Lk. n. 10, Bethl. rarius.

*2652. 14. B. LAXA, L. v. S., species elegantissima circum radices putrescentes fruticis Rhododendri emortui dejecti, Bethl.

B. late effusa, passim subpulvinata, laxissime cohaerens. Floccis ramosis, ramis et ramificationibus divaricatis. Sporidiis globulosis. Fungus persistens ac asservabilis gaudet colore eleganter lutescente cervino, floccis nempe et sporidiis concoloribus.

3.* *Roseae.*

*2653. 15. B. *rosea*, Lk. n. 11, in ramis Platani, Bethl.

*2654. 16. B. *macrospora*, Lk. n. 12, in scobe lignea et in cortice, Bethl. et Salem.

*2655. 17. B. *variosperma*, Lk. n. 13, affinis priori, apud nos in cortice plerumque, Bethl.

*2656. 18. B. LATERITIA, L. v. S., plagis latissimis effusa in caule antiquo Brassicae, Bethl.

B. Thallo crassiusculo effuso. Floccis ramosissimis, lateritiis, primum albidis: sporidiferis erectis intricatis. Sporidiis copiosissimis, eleganter lateritiis. Plagas efficit biunciales, subpulvinatim applanatis.

*2657. 19. B. PULCHERRIMA, L. v. S., plagis unciam latis, 6 uncias longis in cortice confluentibus, Bethl.

B. Thallo densim intertexto, crassiusculo, decumbente, persistente, ime roseo. Floccis sporidiferis, fasciculatim in thallo erectis, ramosissimis, candidis, onustis sporidiis ovato-globosis candidissimis.

*2658. 20. B. LILACINA, L. v. S., in ramis Pini canadensis subcorruptis, Mauch Chunk.

B. Thallo effuso, vix pulvinato. Floccis breviusculis intricatis ramosis, sporidiferis suberectis, lilacinis. Sporidiis ovatis crebris, paulo purpurioribus.

4.* *Flavicantes.*

*2659. 21. B. *fulva*, Lk. n. 15, ad frustulas ligni inter pulverem vaporarium. Bethl. et ad truncos.

*2660. 22. B. *allochroa*, Lk. n. 16, in herbis dejectis, Bethl.

*2661. 23. B. LEUCOXANTHA, L. v. S., passim in cortice, Bethl.

B. Thallo effuso tomentoso. Floccis luteo-flavescentibus crassiusculis, intricatis, ramosis, articulatim septatis. Sporidiferis erectis; sporidiis majusculis, globosis, candidis, densim in ramis aggregatis, subfugacibus.

5.* *Aurantiacae.*

*2662. 24. B. *aurantiaca*, Lk. n. 17, frequens in truncis putridis: rubro-aurantiaca. An Oidium fulvum sit status junior?

6.* *Griseae.*

*2663. 25. B. *cana*, Lk. p. 59, n. 18, in foliis marcidis, Bethl.

*2664. 26. B. *polyactis*, Lk. n. 19, frequens in caulibus, Bethl.

*2665. 27. B. *leucospora*, Lk. n. 23, nobis in fungis, Bethl.

2666. 28 B. *cinerea*, Lk. n. 21, Syn. Car. 1307. In Pennsylvania nobis innotuit insuper Sclerotium durum in Euphorbiae marginatae caulibus putridis.

*2667. 29. B. *bicolor*, Lk. n. 24, in iisdem et aliis caulibus reperta, Bethl.

*2668. 30. B. MINUTULA, L. v. S., in antiquissimis truncis Betulae nigrae, Bethl.

B. minoris voluminis species. Thallo e pulvinulis parvis subrotundis, confluentibus, lineam longis, parum elevatis ex albo-cinerascentibus conflato. Floccis tortis invalidis ramosis. Sporidiis crebris candidis.

7.* *Nigrae.*

*2669. 31. B. *nigra*, Lk. n. 25, Virgaria, Nees. In ramis dejectis rarior, Bethl.

Genus 184. POLYACTIS. F. S. V. p. 184, sub Botrytide.

*2670. 1. P. *quadrifida*, Lk. p. 62, n. 1. In receptaculis aut seminibus Compositarum, Bethl.

*2671. 2. P. *simplex*, Lk. n. 3, evanescens, Bethl. in receptaculis putridis Helianthi annui.

*2672. 3. P. GRISEA, L. v. S., in leguminibus Catalpae et Bignoniae, Bethl.

P. floccis sporidiferis sparsis, griseis, simplicibus, evanescentibus. Sporidiis concoloribus, ovato-cylindricis apice floccorum irregulariter umbellatim collectis, sed etiam in trunco flocci adhaerentibus.

Genus 185. Aspergillus. F. S. V. p. 183.

*2673. 1. A. *candidus*, Lk. p. 65, n. 1, frequens in fungis, Bethl.
*2674. 2. A. *mycobanche*, Lk. n. 2. In Pezizis majoribus, ibid.
*2675. 3. A. *ovalispermus*, Lk. n. 3. In prunorum fructubus, ibid.
2676. 4. A. *glaucus*, Lk. n. 6, Syn. Car. 1314, Monilia vulgaris et in Pennsylv.
2677. 5. A. *roseus*, Lk. n. 8, Syn. Car. 1316, cellis, &c. et. Bethl.
*2678. 6. A. *laneus*, Lk. n. 5, in carioso Salice, ibid.
*2679. 7. A. *griseus*, Lk. n. 10, in fungis putridis, ibid.
*2680. 8. A. purpureofuscus, L. v. S., species distinctissima. In caulibus putridis Brassicae rarius occurrit, Bethl.

A. Hyphasmate longe lateque effuso, tenue. Floccis sporidiferis ramosis et erectis, aut etiam simplicibus, septatis purpureo-fuscis. Sporidiis creberrimis, concoloribus, demum canescentibus, majusculis. Elegans ac persistens.

*2681. 9. A. *virens*, Lk. n. 7, in ramis dejectis in montibus Lehigh mihi obvius. Vix specifice distinctus. Floccis tamen aeque ac sporidiis demum aeruginoso-viridibus, quanquam primo et subtus albescunt.

Genus 186. Penicillum. F. S. V. p. 182.

*2682. 1. P. *candidum*, Lk. p. 69, n. 1, in fungis frequens, Bethl.
*2683. 2. P. *roseum*, Lk. n. 2, in caulibus plantarum, Bethl.
2684. 3. P. *glaucum*, Lk. n. 3, Syn. Car. 1319, Monilia digitata vulgatum et Pennsylv.
*2685. 4. P. *sparsum*, Lk. n. 4. In foliis gramineis, Bethl.

Genus 187. Coremium. F. S. V. p. 182.

*2686. 1. C. *glaucum*, Lk. p. 71, n. 1, in Involucris corruptis Castanearum, Bethl.
*2687. 2. C. *candidum*, Lk. n. 2, in corruptis stipitibus, Bethl.
*2688. 3. C. *citrinum*, Lk. n. 3, rarius in lignis et mucerdis, ibid.
*2689. 4. C. coccineum, L. v. S., insuper lignum cariosum effusum ex Georgia, Torrey misit.

C. caespitibus longe lateque effusis, confluentibus, compositis ex fasciculis floccorum, laete coccineis, basi unitis in pedicellum communem, apice penicillatim divergentibus. Sporidiis densis concoloribus.

*2690. 5. C. flavovirens, L. v. S., frequens observatum in foliis dejectis udis, Bethl.

C. substipitatum, laxum. Fasciculis sparsis parvis subglobosis, floccis parum divergentibus, cum sporidiis ex flavo virentibus.

*2691. 6. C. suriculatum, L. v. S., in cortice dejecto rarius, sed distinctissimum, Bethl.

C. thallo subiculato, tenui, denso, effuso, ex quo densim assurgunt fasciculi, sparsi floccorum coalitorum in firmum pedicellum, apice capitellato-penicillatorum, colore incarnato-cinerascente. Pedicellus subcylindricus rubescit. Capitulum globosum penicillatum-pedicellum magnitudine excellit. Sporidiis concoloribus. Persistens.

*2692. 7. C. fragariastrum, L. v. S., frequens in foliis emarcidis Fragariae cultae in Hortis, Bethl. Amphigenum.

C. fasciculis crebris, amphigenis, aterrimis, concentrice quasi in maculam aggregatis. Basi floccis ex quibus fasciculi contexti, coalitis, rigidiusculis; apice parum penicillatim divergentibus. Sporidiis cinerascentibus. Minutissimum et vigens praesertim in foliorum aversa pagina.

*2693. 8. C. concentricum, L. v. S., *Dematium Penicillus*, Syn. Car. 1330. In pagina aversa Lauri aestivalis foliorum, Salem et Bethl.

C. in maculis cinereo-nigrescentibus foliorum semivivorum, concentrice proveniunt fasciculi floccorum nigrorum, basi coalitorum et quasi pseudo-bulbum efficientium. Apice penicillatim ut in priori divergunt sed multo minus elevati sunt fasciculi. Sporidiis ceterum nigris satis frequentibus.

*2694. 9. C. FIMETARIUM, L. v. S., in fimo vaccino inventum, Bethl.
C. caespitibus minutis sparsis, floccis thalloideis versus basin coalitis subrufescentibus. Sporidiferis capituli, candidis cum sporidiis. Demum subevanescentibus.

Genus 188. CAMPSOTRICHUM. F. S. V. p. 181.

Ad hoc genus placet sequentem fungum pulcherrimum referre, ob characteres—quanquam colore abhorret.
*2695. 1. C. SPLENDIDUM, L. v. S., rarissime ad putridissimos cortices occurrit, Bethl. Optime persistens, ac colorem servans.
C. sparsum, sed gregarie occurrens, tam minutum ut difficiliter observatur nisi lentis opere. Stipite rufo-aurantiaco, sine dubio ex coalitis floccis, ad dimidiam altitudinem totius fungi elevato; tum divaricatim diviso-ramoso in flocculos pellucidos manifestim septatos aurantiacos abiente, Sporidiis globosis concoloribus pulcherrime decoratos.

Series IV. (ACREMONII.).

Genus 189. ACREMONIUM. S. F. V. p. 177.

*2696. 1, A. *verticillatum*, Lk. p. 74, n. 1, passim in truncis, Bethl.
*2697. 2. A. *fuscum*, Lk. n. 3, in ramulis putridis Lauri Sassafras, Bethl. obvium.
*2698. 3. A. *nitidum*, Lk. n. 4. In Sphaeria deusta exsoleta, Bethl. Demum fuscescit.
*2699. 4. A. NIGROSPERMUM, L. v. S., in ligno vetusto rarius inventum, Bethl.
A. thallo tenuissimo effuso, floccis albo-griseis intricatis ramosis. Sporidiis nigrescentibus pellucidis, crebre innatis, sed non verticillatis.

Genus 190. VERTICILLIUM. F. S. V. p. 178.

*2700. 1. V. *tenerum*, Lk. n. 1, in variis caulibus, Bethl.
*2701. 2. V. *capitatum*, Lk. n. 2. Non rarum in truncis, ibid.

Genus 191. DACTYLIUM. F. S. V. p. 366, Suppl.

*2702. 1. D. *candidum*, Lk. p. 77, n. 1, passim in truncis, Bethl.
*2703. 2. D. *nigrum*, Lk. n. 2, in
*2704. 3. D. GRAMINUM, L. v. S., in foliis Leersiae oryzoid., Bethl.
D. Floccis sparsis simplicibus griseis erectis. Sporidiis 3—4 digitatis concoloribus.
*2705. 4. D. MELANOPUS, L. v. S., in scapis Allii Cepae, Bethl.
D. Floccis sparsis quidem sed densis, crassiusculis, nigro-fuligineis articulatim septatis, apice coronatis, sporidiis cinereo-fuligineis. Basi saepe bulboso-incrassata nigriori cetero flocco.
*2706. 5. D. CRUSTACEUM, L. v. S., plagis ingentissimis saepe obtegit culmos giganteos Arundinariae ex Carolina australi ad usum piscatorum in foro venditioni expositae.
D. subcrustaceum tandem devenit, primum floccis erectis, discretis, fragilibus consistit dense aggregatis, apice 3—4 sporidiferis, ceterum nigrescentibus. Sporidiis concoloribus opacis deciduis.

Genus 192. STACHYLIDIUM. F. S. V. p. 178.

*2707. 1. S. *bicolor*, Lk. p. 78, n. 2, in caulibus exsiccatis, Bethl.
*2708. 2. S. ROSEUM, L. v. S., in foliis caulibusque, plantarum male exsiccatarum in Herbariis v. c. Solidaginis rigidae, Bethl.

S. Hyphasmate caespitosim aggregato, saepe confluente caespitulis minutis rotundis, roseo-incarnatis, compositis ex floccis septatis ramosis. Sporidiis lateralibus crebris amoene roseis.

*2709. 3. S. FULVUM, L. v. S., in caulibus putridissimis Brassicae, Bethl.

S. hyphasmate tenue fulvo. Floccis erectis rigidiusculis concoloribus, sporidiferis. Sporidiis verticillatis fulvis, demum decolorantibus.

*2710. 4. S. LUTESCENS, L. v. S., terrestre, locis obvium ubi copia ramorum putrescentium accumulata, Bethl.

S. hyphasmate magno expanso orbiculato, ambitu albo. Floccis sporidiferis decumbentibus, ramosissimis lutescentibus, grosse articulato-septatis cum sporidiis ovalibus verticillatis luteis.

Genus 193. SPONDYLOCLADIUM.

*2711. 1. S. *fumosum*, Lk. p. 78, in lignis, Bethl. Etiam passim tenuius omnibus partibus in herbis lignatilibus, v. c. Artemisia absynthium.

Series V. (MUCORINI.).

In hac serie cogemur sequi Friesii dispositionem in Systemate Orbis Vegetabilis, tribus nempe I. et II. Ordinis ejus secundi, Mucorinorum amplectentem. Et quidem nobis melior videtur per se (exclusis tribubus III. et IV. jam secundum Linkium citatis)—et quia ex serie Linkiana Genera, Pilobolus, Erysiphe et Rhizoctonia jam alio loco Friesiano, summo jure citata omittere necesse est, Stilbumque contra, omnino ad Mucorinos pertinens ut etiam vult Fries. hic inserere.

Genus 194. CHORDOSTYLUM.

*2712. 1. C. *capillare*, F. S. V. p. 175, rarius Bethlehem in foliis putridis. Vide etiam A. et S., Conspectum.

Genus 195. STILBUM. F. S. V. p. 175, et Sprengel., p. 545.

2713. 1. S. *vulgare*, Spr. p. 545, n. 1, Syn. Car. 1280, et. Bethl.
2714. 2. S. *gelatinosum*, Pers., Syn. Car. 1279, et Bethl. ad truncos.
2715. 3. S. *tomentosum*, Spr. n. 14, Syn. Car. 1276, et. Bethl.
2716. 4. S. *byssinum*, Pers. in hymenio putridi fungi Bethl. et Syn. Car. 1282.
2717. 5. S. *piliforme*, Spr. n. 8, ad ligna etiam Bethl. et Salem in Involucris, Syn. Car. 1278.
2718. 6. S. *bulbosum*, Spr. n. 2, solummodo Car., Syn. Car. 1281.
2719. 7. S. *rigidum*, Spr. n. 9, in truncis, Sal. et Bethl. S. C. 1276.
2720. 8. S. *turbinatum*, Spr. n. 18, Syn. Car. 1283, Salem.
2721. 9. S. *rubicundum*, Spr. n. 19, Syn. Car. 1284, non Pennsylv.

*2722. 10. S. ROSEUM, L. v. S., rarius inter fibros ligni cariosi subsolutos, Bethl.

S. minutissimum, efformans caespitulos inter fibros; stipitibus subbulbosis brevibus, capitulis subturbinatis cum stipite pallido-roseis.

*2723. 11. S. INQUINANS, L. v. S., an hujus Generis? abnorme et valde memorabile. Inventum super ramos et dejectamenta effusum, Bethl.

S. longe lateque effusum, in aggeres magnos aut acervos unciales accumulatum atro-inquinantes, crassos. Stipitibus longis, bilinearibus, subulatis, rigidis, fragilibus aterrimis. Capitulis globosis, nigris, obscuris deciduis.

Nota.—Sprengelius sub hoc genere subsumpsit heterogenos fungos—inter quos admiratus sum *Peziza* Persicae, Syn. Car. 1290, quae cum P. *Rhois* ibidem 1291, est sine dubio *Calycium*, Lichen, observare. Ubi Linkii sententia placebit Stilba, non ex opere ejus determinandum. Mihi pro certo videtur hoc genus ad Mucorinos Friesii pertinere.

Genus 196. Eurotium. S. F. V. p. 177, Lk. p. 79.

2724. 1. E. *herbariorum*, Lk. p. 79, Syn. Car. 427, varians magnitudine et colore ubique.
*2725. 2. E. obliteratum, L. v. S., in herbis male exsiccatis Herbarii mei.
E. thallo obliterato, nullo. Sporangiis magnis citrinis.

Genus 197. Mucor. F. S. V. p. 176, Lk. 80.

*2726. 1. M. *fimetarius*, Lk. p. 80, n. 1, in stercore vaccino. Evanescens, Bethlehem.
*2727. 2. M. *rufus*, Lk. n. 3, persistens in Polyporo, Bethl.
2728. 3. M. *flavidus*, Lk. n. 8, in Agaricis rarius sed perelegans. Evanescens, Salem et Bethl., Syn. Car. 421.
2729. 4. M. *Mucedo*, Lk. n. 14, Syn. Car. 423. Ubique.
*2730. 5. M. *ascophorus*, Lk. n. 15, in Cucurbitis, Bethl.
*2731. 6. M. *tenuis*, Lk. n. 16, in ligno putrido myeomatre illito Nazareth. Distinctum persistens.
*2732. 7. M. *carneus*, Lk. n. 20, in frustulis pineis, Philad. evanescens.
*2733. 8. M. *minimus*, Lk. n. 22, in putridis Cucurbit. Bethl.
2734. 9. M. *tenellus*, Lk. 23, Syn. Car. 426, passim et Bethl.
2735. 10. M. *caninus*, Lk. 24, Syn. Car. 424, et. Bethl.
*2736. 11. M. *stercoreus*, Lk. 25, etiam in canino stercore, ibid.
2737. 12. M. *murinus*, Lk. 26, Syn. Car. 425, et. Bethl.
*2738. 13. M. *Fimbria*, Lk. 27, in Sphaeriis, Salem et Bethl.
*2739. 14. M. *albo-virens*, Lk. 28, in Pezizis vetustis, Bethl.
*2740. 15. M. *truncorum*, Lk. n. 2, in Catalpa caesa, Bethl.
*2741. 16. M. capitato-ramosus, L. v. S., in Boleto aut Polyporo vetusto, Bethl.
M. ingens, persistens. Floccis densis fulvo-luteis, semi-uncialibus, caespitosis, apice divaricato-ramosis, quasi laxum capitulum sistentibus, onustis nempe Sporangiolis magnis luteis, demum nigrescentibus. Perpulcher Mucor. Floccis firmiusculis.
*2742. 17. M. echinophila, L. v. S., non rarus in spinis Involucrorum, Castan. Bethl.
M. pusillus, simplex. Hyphasmate simplici nigro cinereo breviusculo, subulato, basi incrassata. Sporangiolo hyalino demum cinereo-deciduo. Densissime prorumpit aut potius insidet in spinis, oculum nudum effugiens.

Genus 198. Thamnidium.

*2743. 1. T. *elegans*, Lk. p. 96. Rarissime sed distinctissimum inventum mense Decemb. in frustulis corticis Salicis, Bethl. Sporangiola elongata. Medium fugacissimum ceteris minoribus candidis persistentibus.

Series VI. (Byssеae.) F. S. V. p. 307 et porro inter Algas byssaceas.

Genus 199. Oidium.

*2744. 1. O. *aureum*, Lk. p. 121, n. 1. Solummodo Carolina ligno carios.
*2745. 2. O. *fulvum*, Lk. n. 2. Bethl. rarius.
*2746. 3. O. *fructigena*, Lk. n. 3, in Prunis et Persicis, Bethl.
*2747. 4. O. *monilioides*, Lk. n. 4. Salem et Bethl. in graminib.
*2748. 5. O. *subramosum*, Lk. n. 10, in ramis Sassafras, Betbl.
*2749. 6. O. *croceum*, Lk. n. 8, in cortice Castaneo, Bethl.
*2750. 7. O. candidum, L. v. S., in foliis quercinis putridis, Bethl.

O. floccis crassis decumbentibus aggregatis, candidis, ex articulis crassis—Torulae non dissimilibus. Sistens maculas candidas laxas.

2751. 8. O. INQUINANS, L. v. S., Syn. Car. *Trichoderma globosum*, 524. Fungum hunc vulgatissimum, ulnari longitudine globosis pulvinulis, saepe confluentibus, occupantem ramos etiam Quercinos, Oidium esse non amplius dubitandum. Floccis erectiusculis articulatis simplicibus, demum solutis in Sporidia fuligineo-atra.

Genus 200. TETRACOLIUM.

*2752. 1. T. *Tuberculariae*, Lk. p. 125. Non solum in Tubercularia vulgari, sed etiam in aliis speciebus Tubercularae observatum, Bethl.

Genus 201. ALTERNARIA.

*2753. 1. A. *tenuis*, Lk. p. 127, n. 1. Frequenter occurrens in Brassicis Hortorum, in calycibus Helianthi annui, et in culmis Zizaniae prope Philadelphia observata.

Genus 202. MONILIA.

2754. 1. M. *antennata*, Lk. p. 126, n. 1. Syn. Car. 1322. Et Bethlehemis frequens: v. c. in tectis pineis.

*2755. 2. M. *expansa*, Lk. n. 2, in caulibus frequens Bethl.

*2756. 3. M. *alta*, Lk. n. 3, in lignis et ramulis, ibid.

*2757. 4. M. *sparsa*, Lk. n. 4, in Arundine et caulibus ibid.

2758. 5. M. FUSCONIGRA, L. v. S., Syn. Car. Trichoderma spadiceum 525. Huc pertinet. Frequens etiam Pennsylvania e. c. ad palos.

M. caespitulis 2—3 linearibus, subrotundis pulvinatis. Floccis ferrugineo fusco-nigris frequentissimis simplicibus stipatis, quasi subradiatim divergentibus, demum solutis in articulos fusco-nigros, inquinantes.

*2759. 6. M. GLOBOSA, L. v. S., rarius in cortice juniorum ramorum Populi italicae, Bethl.

M. caespitulis globosis, sparsis, nigris, compositis e floccis atro-fuligineis irregulariter aggregatis nec radiantibus. Articulis globosis in quos demum soluta—atro inquinat.

*2760. 7. M. PUNCTANS, L. v. S., passim obvia in lignis pyrinis, Bethl.

M. Caespitulis minutis, quasi punctantibus lignum, compositis ex floccis crassiusculis brevibus subdivergentibus demum conglutinatis—lignum inquinantibus, solutis nempe articulis nigro-subnitentibus. Pulvinuli saepe longe lateque confluunt, primum fibris ligni subimmersi.

Genus 203. TORULA.

2761. 1. T. *herbarum*, Lk. p. 128, n. 1, Syn. Car. 1321, ubique vulgatissima in caulibus.

*2762. 2. T. *tenera*, Lk. n. 2, frequens ad ramos, Bethl.

*2763. 3. T. MEDULLAE, L. v. S, in medulla maximarum caulium longe lateque effusa, Bethl.

T. Floccis in thallum fuligineum tam conglutinatis ut fere pelliculam efficiunt. Floccis fragilibus, demum solutis in ovales articulos.

*2764. 4. T. CUCURBITARUM, L. v. S., latissime effusa in cortice Cucurbitarum (Lagenariae) maculis maximis, v. c. 4—6 uncialibus, Bethl.

T. atra, maculas determinatas efformans confluentes, inquinantes. Floccis fragillimis—articulis globosis.

*2765. 5. T. CRUSTACEA, L. v. S., ramos juniores salicinos incrustans longe lateque non rara, Bethl.

T. ex epidermide prorumpens et eam longe lateque demum incrustans, fuliginea. Floccis conglutinatis—inquinantibus ad tactum, ob solutos articulos minutissimos.

*2766. 6. T. OLIVASCENS, L. v. S., in libro corticis, epidermide orbato, Catalpae, Bethl.

T. pulvinulis elongatis, confluentibus, olivaceo-nigris subseriata. Floccis grosse articulatis, et quasi ramosis.

Series VII. et VIII. (Appendix.).

Momenti mihi videtur Fungos aut Mycelia aut quidquid sint, sequentium Generum in opere meo, titulum Conspectus omnium Mycetomorphorum Americanorum sibi vindicante, nullimodo omnino negligi. Easdem degenerationes, eadem initialia, eadem exanthemata aut analoga invenisse eis et transatlantice, de quibus peritissimus quisque anceps haeret, an sint Vegetabilia autonoma, nec ne, factum est, non omnino negligendum in his rebus dijudicandis. Sententiae Friesii assentio de plerisque—et Linkius de iis dubitat—sed Linkii ad exemplar, tamen quam potui diligentiam adhibui, omnia hae Mycetomorpha recensere hoc loco, equidem praestantiora nova mihi obvia describere, appendicis, ad instar.

Genus 204. Helicomyces. F. S. V. p. 310, Byss.

*2767. 1. H. *roseus*, Lk. p. 131. Tantum mihi obvius in trunco jacente Erie County, Pennsylv.

Genus 205. Dematium. Link. p. 131.

*2768. 1. D. *nigrum*, Lk. p. 131, n. 1, passim in cortice Bethl.
*2769. 2. D. *mollissimum*, Lk. n. 2. Salem ad radices.
*2770. 3. D. *badium*, Lk. n. 4, ad ramos dejectos Sal. et Bethl.
*2771. 4. D. *jubatum*, Lk. n. 5, ibidem, Bethl.
*2772. 5. D. *rupestre*, Lk. n. 6, ad rupes udas, Bethl.
*2773. 6. D. *rupincola*, Lk. n. 7, in Lichenibus rupestribus, ibid.
*2774. 7. D. *muscorum*, Lk. n. 8, frequens in Bartramia vix autonomon., Bethl.
*2775. 8. D. *cornutum*, Lk. n. 12, passim in ramis salicinis, Bethl.
*2776. 9. D. *subcorticale*, Lk. n. 14, rarius sub cortice.
*2777. 10. D. *strigosum*, Lk. n. 15, ligno putridissimo juglandino obvium, Bethl.
*2778. 11. D. *Alluta*, Lk. n. 13, passim in interioribus truncis. Specimina perpulchra teneo ex navibus bellicis classis americanae in Lacu Erie constructae, et post paucos annos ab hoc hoste funguloso destructae—hostis Britannici quanquam victrix fuit.
*2779. 12. D. *lintaceum*, Lk. n. 21, rarius in truncis, Bethl.
2780. 13. D. ramosum, L. v. S., Syn. Car. 1362, Racodium. In ramulis Andromedae arboreae, Salem nec Bethl.
2781. 14. D. Smilacis, L. v. S., Syn. Car. 1329, etiam satis frequens Bethl. in smilacibus.
*2782. 15. D. episphaericum, L. v. S., passim in exsoletis Sphaeriis, Bethl. Non est Cladosporium. D. fasciculatim contextum ex filis badiis et fuscis, articulatis, ramosis. Fasciculis minutis erectis.
2783. 16. D. *papyraceum*, Lk. n. 23, frequens intra ligna cariosa Salem et Bethl. Syn. Car. 1359. Vix autonomon.
2784. 17. D. *aeruginosum*, Pers., Syn. Car. 1360, et Pennsylv. frequens.
*2785. 18. D. *Corium*, Pers. Myc. Europ. vulgatissimum in fissuris truncorum, Pennsylv. et Carolina.
*2786. 19. D. *lanatum*, Lk. 22, in interiori trunco, Bethl.
2787. 20. D. cinnamomeum, L. v. S., Syn. Car. 1361. Racodium, passim et Bethl.

Quinque ultimae species, Xylostromata auctorum, sunt. Assentio Friesio, degenerationes variorum Hymenomycetum in suffocatis mihi sunt, et quidem talis plerumque, quae ex Polypororum aut Agaricorum in lignum penetrantibus partibus radicantibus degeneratis oriuntur: ita nempe, ut nisus vegetativus omnino in pseudo-radicem abiens, formationes Pilei et evolutione perfecta ceterorum organorum carent.

Genus 206. Ozonium. S. V. F. p. 302, Byssac.

2788. 1. O. *auricomum*, Lk. p. 138, n. 1, Syn. Car. 1328, Demat. strigosum, Salem et Bethl.

2789. 2. O. *stuposum*, Lk. n. 2. Bethl. in trabibus dejectis putridis.

Duae haec species, saepissime observatae sine dubio genuinae sunt et locum sibi vindicant byssaceum quem iis Friesius tribuit. Nullimodo autem ceteris congruunt—valde distinctis, quibus me censente nomen genericum Himantia debetur videlicet.

Genus 207. Himantia. Myc. Europ. p. 88.

*2790. I. H. *cellaris*, Pers. Myc. Europ. I. p. 89, apud nos Bethlehemis tam distincta et Persoonianae congrua, nec cum Thelephora, H. domestica eadem, ut vix dubitare possum ut sit autonomon.

*2791. 2. H. *subcorticalis*, Pers. Myc. Europ. I. p. 92, n. 15. Quam ante oculos habeo, et frequentem inveni intra corticem et lignum truncorum, et quidem saepius ulnarem immo triulnarem—nullimodo, pro mycelio habendam censeo. Congener est prioris.

H. *lateritia* est Clavaria aut Typhula: H. *candida* Sporotrichum et idem H. *epiphylla* ex subgenere Byssocladium.

Genus Fibrillaria. Lk. p. 140, (F. felina nobis non obvia)—procul ullo dubio eliminandum, vide F. S. V. p. 217. F. *Arbuscula*, Lk. n. 2, est ut F. *vestita*, F. *implexa* et F. *subterranea* initium radicale Agaricorum, Hydnorum, Polyporum, &c. truncicolarum. Sed quid revera sint duae sequentes insignes frequentissime in Carolina et Pennsylvania observatae non valeo dijudicare et ideo pro futuro examine hoc loco et nomine adoptato describam.

Genus 208. Fibrillaria, L. v. S., non Linkii.

2792. I. F. crocea, L. v. S., Syn. Car. 1370, Rhizomorpha omnino perperam. Vulgata est apud nos in truncis—nullimodo radiculis similis, nec Rhizomorphis nec Linkii Fibrillariis. Saepe 6 uncias et ultra longa.

*2793. 2. F. complanata, L. v. S. In truncis latere interno, ad insignem latitudinem ac longitudinem expansa.

Ramosissima, alba, complanata, quasi ex stipite longo emanente, in ramos demum tenuissimos flabellatim divisa. Substantia prioris.

Hypha bombycina, Lk. p. 141, unica a me apud nos sed frequenter in truncis quercinis, jacentibus observata tempore udo et tactu evanescens—degeneratum aut potius luxurians est initium Hyphomycetis mucedinei cujusdam.

Genus 209. Phlebomorphia. Pers. Myc. I. p. 61.

Exclusis Mesentericis, quae procul dubio sunt initia Trichospermorum—nam omnes mihi notas in pyxide botanica asservatas vidi in fungos trichospermos transformavi—duae sequentes species omnino alius indolis non possum non pro vegetabilia autonoma habere.

*2794. 1. P. *rufa*, Pers. Myc. p. 61, n. 1, elegantula passim obvia in cariosis udis, Salem et Bethl.

*2795. 2. P. arbuscula, L. v. S., ad interiora latera corticis dejecti subsicci, Bethl.

P. omnino refert picturam arbuscularum nigrarum juxta positarum, non ex uno centro sed quasi sylvam formantium. Plerumque transversim positae sunt et ex nigris fibrillis compositae. Trunco nempe ramificato, plicatim elevato, intus albescente, abiente in innumeros ramulos attenuatos, cum ipso trunco quasi conflatos ex flexuosim unitis flocculis, versus basin satis crasso; in ambitu tenuissimae, deveniunt ramificationes. Arctim et inseparabiliter cortici adhaerens. Arbusculae plurimae plusquam unciali longitudine. Sed etiam multo minores. Credideris picturam sylvulae hybernalis ante oculos positam—occupantem 3—6 uncias.

Genus 210. Erineum.

Pauca sunt praemonenda in hoc Genus vexatissimum quod viris optimis, Friesio, Kunze, Schlechtendahl, &c., ambabus suis subgeneribus, Phyllerio et Erineo nec non Taphrina F. p. 315—317, S. V. F. tam evidenter videtur meram degenerationem pilorum aut cellularum et inde Byssaceas spurias sistere. Asserta illorum—oppugnare procul sit. Non pygmei est gigantibus bellum inferre; et lubenter fateor, inter Phylleria praesertim, plures species militare, quae etiam mihi tales deformationes nec aliud videntur, v. c. E. Juglandis, nervale, &c. et ex nostris E. *Pruni*, L. v. S. Sed aliae, et quidem prae ceteris plurima Erinea propria (Rubigines Linkii Obs. I.) nostro mirando E. *anomalo* auctae—non tam confidenter possum ad meras degenerationes, quanquam regulares, ut *Bedequar Rosarum*, *Gallae*, &c. v. p. 316, F. S. V. referre. Nam quomodo, v. c. possim Erinea in foliis glaberrimis Betulae, Aceris, Populi, prae ceteris autem Fagi orta pro talibus habere non video. Quid autem sint, an Byssaceae verae, ut suspicor, nec ne non valeo dijudicare. Forsan melius determinandum post perfectiorem cognitionem ingentis molis horum mycomorphorum, quae secundum imperfectas jam notas observationes in foliis vivis Tropicis degunt. Interea, hoc loco, americana mihi obvia Erinea recensenda placet.

*1. *Phylleria*.

*2796. 1. E. *quercinum*, Lk. p. 148, n. 7, (non Syn. Car. n. 1352—quod non Erineum nec vegetabile bene monente Kunze) frequens in foliis quercinis Bethl.

2797. 2. E. *acerinum*, Lk. n. 10, frequens in A. rubro Carol. Syn. Car. 1358.

*2798. 3. E. *semydophilum*, Lk. n. 11, in foliis betulinis Horti Nazareth.

2799. 4. E. *Vitis*, Lk. n. 13, est idem cum Syn. Car. 1353, et frequens occurrit etiam Bethl.

*2800. 5. E. *alnigenum*, Lk. n. 18, frequens in foliis Alni undulatae prope Meadville in Pennsylv.

2801. 6. E. Quercus cinereae, L. v. S., Syn. Car. 1354, bonum—sed non in Pennsylv.

*2802. 7. E. Pruni, L. v. S., nervos Pruni virginianae sequens ex New York, communicavit Halsey.

E. an hujus generis? Floccis longis subrectis utrinque circum nervum folii centralem densissime sitis, in pagina aversa colore badio-ferrugineo, ad 2—3 linearem longitudinem extensis nec intricatis aut saltem parum. Demum etiam circum nervos secundarios apparet.

*2. *Erinea propria*.

2803. 8. E. *roseum*, Lk. n. 25, Syn. Car. 1349, betulinum frequens in Betula nigra, Salem et Bethl.

*2804. 9. E. *betulinum*, Lk. n. 26, in B. nigra, Bethl.

*2805. 10. E. *platanoideum*, Lk. n. 28, in foliis Aceris saccharin., Bethl.

2806. 11. E. *fagineum*, Lk. n. 32, Syn. Car. 1350, vulgatissim. et Salem et Bethl.

*2807. 12. E. *Pyracanthae*, Lk. n. 34, in foliis Crataegi punctatae, Bethl. rarius.

*2808. 13. E. *purpurascens*, Lk. n. 36, frequens Bethl. in Acerinis foliis.

*2809. 14. E. lineola, L. v. S., frequens et distinctissimum in foliis Betulae carpinifoliae (lentae) nec alibi, Betbl.

E. caespitibus linearibus, aggregatis, subparallelis, confluentibus, satis crassis—interdum longis, quasi lineolas efficientibus, angustis, amoene purpureis. In aversa pagina folii paulisper tantum in superiori depressi.

*2810. 15. E. anomalum, L. v. S., valde abnorme—tamen nullimodo dubitandum de genere. In petiolis foliorum Juglandis nigrae et J. cinereae, neque alibi, pervulgatum.

E. petiolis innatum, in tuberculo si vis, plerumque scutelliforme—saepe ¼ uncialis diametri; interdum pluribus talibus tuberculis confluentibus aut aggregatis ita ut semiunciam occupant. Margine conspicuo gaudent, et hoc subiculum scutellatum, intus, sectione, esse durum, nigrum demonstratur, quanquam extus colorem et indolem petioli servat. Jam in folio vigente, observatur frequentissime—in dejecto tandem omnino evolutum. Tum in disco scutellae, apparent densissime intricati flocci, articulati crassi, torti, ferruginei, constructione omnino E. alnei. Colore floccorum primum ac in vigenti petiolo, pallidiore, demum ime rubro-ferrugineo.

Memorabile mihi videtur in Tiliarum foliis apud nos, nunquam me invenisse ulla vestigia Erinei aut Phyllerii tam vulgati in Tiliis europaeis. An causa sit, quod plerumque Tiliae europaeae sub cultro gementes, aptiores devenient fungos epiphytos producere, ut sane in aliis arboribus mihi innotuit ni fallor. Miratus sum ceterum mihi obviam facta in America tam pauca Erinea, nec ullum, E. anomalo excepto, in foliis non analogis Europaeis arboribus talia producentibus.

Classis Quinta. GYMNOMYCETES (Entophytae et Tuberculariní Friesii).

Series I. Entophytae.

Genus 211. Caeoma.

α. Subgen. UREDO.

1. *Ustilago.*

2811. 1. C. U. *segetum*, Lk. H. p. 1, n. 1, Syn. Car. 483, frequens in variis segetalium fructus, Salem et Bethl.

2812. 2. C. U. Zeae, L. v. S., Syn. Car. 485, frequens etiam Pennsylv. Lk. p. 2, n. 3, non diversum, quoad descriptionem, sed nostrum giganteum. Nam observatio mea in Syn. Car. de *pulvere capil laceo* erronea est. Primo adspectu revera ita se habent Sporidia, sine deceptione oculorum, sporidiis nempe invicem adglutinatis, quasi flocci spurii oriuntur, qui autem aquae immersi omnino solvuntur in sporidia globosa viridiatro-cinerea. Ceterum germina ab Caeomate hoc infesta mire intumescunt. Inveni talia germina interdum ad uncialem diametrum, immo biuncialem distentia. Fungus, primo statu evolutionis in centro germinis, nascit gradatim quasi totum albumen occupans, epidermidem distentans ita, ut demum fere diaphana devenit antequam rumpitur. Passim servat formam originalem, et passim varie contortam reddit. Maculam nullam observavi.

2813. 3. C. U. *Caricis*, Lk. n. 11, Syn. Car. 484, et Bethl. ubi plerumque Caricem Buxbaumii infestat.

*2814. 4. C. U. *utriculosum*, Lk. n. 23, in perigynis Polygoni amphibii in Lacu Leboeuf prope Waterford, Erie County, Pennsylv.

2815. 5. C. U. Syntherismae, L. v. S., satis frequens in calycibus et germinibus Syntherismae (Digitariae) in Carol.

C. in vaginis etiam junioribus sese ostendit ante evolutionem. Sporidiis cinereo-atro viridibus, laxissime effusis inquinantibus.

*2816. 6. C. U. Junci, L. v. S., rarissime in vaginis umbellarum et germinibus Junci tenuis, Salem et Bethl.

C. aterrimum, longitudinaliter in glumis effusum, primum tectum cortice quasi spurio nigronitido. Sporidiis minutissimis conglutinatis. An idem Ustilago in Rhynchosporis rarissime obvia, sporidiis majoribus.

2. *Rubigines.*

*2817. 7. C. U. *Rubigo*, Lk. n. 9. Halsey ex New York in cerealibus.

2818. 8. C. U. *linearis*, Lk. n. 8, Syn. Car. 464, in foliis cerealium Salem, Bethl. et ubique.

*2819. 9. C. U. *rimosum*, Lk. n. 14, rarius in Scirpis juxta Hope Novae Cesareae.

*2820. 10. C. U. Andropogi, L. v. S., in foliis Andropogi avenaceae Bethl. rarius et affinis C. longissimo, a quo differt praesertim macula purpurascente manifesta.

C. maculis longissimis, angustis purpurascentibus. Acervis longissimis parallelis etiam angustatis, erumpentibus longitudinaliter ex epidermide elevata. Sporidiis demum laxe effusis globosis, rufofuscis.

*2821. 11. C. U. Iridis, L. v. S., frequens in foliis marcidis Iridis virginicae, Bethl.

C. affine C. Lilii; maculis flavescentibus, acervis rotundis ovalibus non circinnatim positis, sed dispersis; primum tectis epidermide, satis elevatis. Sporidiis copiosis subpedicellatis, fulvo-ferrugineis, demum effusis. Nunquam nigrescunt sporidia ut in C. Lilii.

2822. 12. C. U. Smilacis, L. v. S., Syn. Car. 471, Link. n. 22, et Bethl. in Smilacis foliis.

2823. 13. C. U. *Labiatarum*, Lk. n. 34, Syn. Car. U. Clinopodii—469, et Bethl. in Pycnanthemis.

2824. 14. C. U. Ipomeae, Syn. Car. 468, Lk. n. 38, non Pennsylv.

2825. 15. C. U. Elephantopodis, L. v. S., Syn. Car. 467, Lk. 54, solummodo in Carolina.

2826. 16. C. U. Solidaginis, L. v. S., Syn. Car. 472, vulgatum et Pennsylv.

2827. 17. C. U. Terebinthinaceae, L. v. S., Syn. Car. 473, non in Pennsylv.

*2828. 18. C. U. Helianthi, L. v. S., rarius in foliis H. gigantei, Bethl.

C. maculis obliteratis. Acervis aggregatis nudis pulvinatis, densis, flavo-rubris, primum subsolidis, demum spargentibus sporidia minuta aurantio-rubra.

*2829. 19. C. U. Anemonis, L. v. S, in aversa pagina Anemonis quinquefoliae, Bethl. rarum.

C. maculis lutescentibus majusculis. Acervis subrotundis dilatatis, parum elevatis, Sporidiis pallidis.

2830. 20. C. U. *Campanularum*, Lk. 44, in C. amplexicaule, Syn. Car. 465, et. Bethl.

2831. 21. C. U. *Onagrarum*, Lk. 32, Syn. Car. *Circaeae*, 466, et. Bethl.

2832. 22. C. U. *miniata*, Lk. 84, Syn. Car. 463, Salem et Bethl.

*2833. 23. C. U. *ruborum*, Lk. 86, frequens, Bethl.

2834. 24. C. U. *Potentillarum*, Lk. 87, Syn. Car 461, in Potentilla canadensi frequens et Pennsylv.

2835. 25. C. U. Agrimoniae, L. v. S., saepe omnino obtegens paginam inferiorem Agrimoniae, perperam ad U. rosae, Syn. Car. 462.

C. maculis lutescentibus. Acervis minutis, confluentibus, amoene rubro aurantiacis sporidiis, demum decolorantibus.

*2836. 26. C. U. *Filicum*, Lk. n. 101, in Aspidiis, ex New York, communicavit Dr. Torrey.

*2837. 27. C. U. Teucrii, L. v. S., rarissime in foliis Teucrii virginicae, Bethl.

C. maculis obliteratis. Acervis densim congestis macullariformibus, effusis, eleganter rubris. Sporidiis minimis subcoccineo-ruberrimis.

2838. 28. C. U. Azaleae, L. v. S., Syn. Car. 470, minima frequens in foliis Azaleae nudiflorae, Bethl. et Salem.

C. maculis obliteratis, acervulis in pagina aversa, primum subconicis, minutis, aurantiacis, demum effusis. Sporidiis minutissimis, decolorantibus, et inaequalibus, pyriformibus nempe immixtis globosis.

3. *Fuscescentes et Nigredines.*

2839. 29. C. U. Ari virginici, L. v. S., Syn. Car. *Caladii*, 480, Lk. n. 21. Non est Caladium sed Arum in quo invenitur frequenter, et in Pennsylvania.

2840. 30. C. U. Spermacoces, L. v. S., Syn. Car. *Puccinia* 502, Lk. n. 57, elegans. Sporidiis *non septatis*, et Philad.

*2841. 31. C. U. Chaerophylli, L. v. S., in foliis Chaerophylli aut Myrrhis Claytoni Penns.

C. maculis obliteratis: acervis rotundis, sparsis et aggregatis etiam subconfluentibus, epidermide demum rupta, apertis. Sporidiis effusis globosis, ex tabacino nigris, splendentibus.

*2842. 32. C. U. Hyperici, L. v. S., in caulibus Hyperici ignoti rarius in Carolina; non idem cum C hypericorum, Lk.

C. maculis in caule piloso-strigoso, purpureis: acervis sparsis, acuminato-ovatis, bullatis, elevatis, epidermide rupta cinctis. Sporidiis fusco-purpureis, demum effusis.

2843. 33. C. U. Heucherae, L. v. S., Lk. 79, Syn. Car. 479, non in Pennsylv.

*2844. 34. C. U. *apiculosum*, Lk. p. 90, in Phaseolis Bethl. Syn. Car. 478.

2845. 35. C. U. *appendiculosum*, Lk. 91, Syn. Car. 477, et. Bethl.

2846. 36. C. U. *punctuosum*, Lk. 93, Syn. Car. 474, scutellata etiam Bethl. in Euph. hypericifolia.

2847. 37. C. U. *Leguminosorum*, Lk. 92, Syn. Car. 476, Viciae in Vicia Faba, Bethl. et Salem.

*2848. 38. C. U. Lobeliae cardinalis, L. v. S., rarius in pagina aversa foliorum Lobel. card. Naz.

C. maculis obliteratis, acervis effuso-confluentibus, non elevatis nec epidermide cinctis. Sporidiis effusis, pedicellatis, chocolatino-purpurascentibus.

*2849. 39. C. U. Thalictri, L. v. S., rarissime sed pulchrum in foliis Thalictri cornuti, Bethl.

C. macula nulla. Acervis pulvinatis subrotundis—diametro lineari et ultra, late aggregatis, epidermide subcinctis. Sporidiis grossiusculis e chocolatino-fuscis.

*2850. 40. C. U. brunneum, L. v. S., in folio ignoto ex collectione clarissimi Collins, Philad.

C. macula lutescente, in pagina superiori. Acervulis applanatis, difformibus, varie confluentibus Sporidiis minutis, brunneo-fuscis, primum conglutinatis.

*2851. 41. C. U. Chelidonii, L. v. S., rarissimum. In foliis Chelidonii ex New York missis.

C. macula lutescenti. Acervulis difformibus, aggregatis confluentibus. Sporidiis majusculis fuscis et nigris, ovalibus, laxim diffusis.

4. *Albugo.*

2852. 42. C. U. *candidum*, Lk. 102, Syn. Car. 481 et 482, in foliis cruciferarum; in Portulacca oleraceae, &c. frequens et Pennsylvania.

*2853. 43. C. U. Amaranthi, L. v. S., in aversa pagina foliorum A. paniculatae, Bethl. passim.

C. affine *candido* sed multo majus; acervis pseudo-peridiosis confluentibus, bullatis, subconcentricis, plerumque ruptis. Sporidiis ex albo-lutescentibus, majusculis.

5. *Sporidiis inaequalibus.*

*2854. 44. C. U. *gyrosum*, Lk. 105, in foliis Rubi Idaei, Bethl.

*2855. 45. C. U. *cylindricum*, Lk. 108, in Populo italica, Bethl.

*2856. 46. C. U. *epiteum*, Lk. 112, in foliis Salicis nigrae fere totum arborem occupans, Bethl.

β. Subgen. AECIDIUM.

*2857. 47. C. A. *Convallariatum*, Lk. 114, in foliis Smilacinae racemosae, Bethl. rarissime.

2858. 48. C. A. Uvulariatum, L. v. S., Syn. Car. 453, vix ut vult Link. n. 116, ad C. Alliatum. Maculis nempe parvis, nunquam ¼ unciam excedentibus, etiam candidis ab Alliato differt.

2859. 49. C. A. Smilacinatum, L. v. S., Syn. Car. 452, Lk. 117, nondum obvium in Pennsylv.

2860. 50. C. A. Aroidatum, L. v. S., Syn. Car. 457, *Caladii* in Aro virginico Salem.

*2861. 51. C. A. Dracontinatum, L. v. S., frequens in foliis et petiolis etiam in scapis Ari dracontii, Bethl. Non idem cum priori. Etiam Salem.

C. maculis pallidis, late extensis in folio, fere totum saepe occupantibus. Pseudoperidiis magnis, sparsis, crebris, sine ordine in macula dispositis. Sporidiis aurantiacis.

*2862. 52. C. A. *rubellatum*, Lk. n. 120, rarius in variis Rumicibus, Salem et Bethl. Plerumque macula sterili.

2863. 53. C. A. *Lysimachiatum*, Lk. 126, Syn. Car. 438, omnino idem. In Pennsylvania plerumque in L. racemosa.

2864. 54. C. A. Pentstemoniatum, L. v. S., Syn. Car. 449, Lk. p. 47, solummodo in Carolina observatum.

2865. 55. C. A. Apocynatum, L. v. S., Syn. Car. 448, Lk. n. 135, nondum in Pennsylv.

2866. 56. C. A. Convolvulatum, L. v. S., Syn. Car. 454, frequentissimum etiam in Pennsylv. in C. pandurato.

2867. 57. C. A. *Compositatum*, Lk. n. 139, et in Pennsylv. frequens.

α *Prenanthis* in Krigia, Salem, Syn. Car. 434.

β *Eupatoriae*, Bethl. in E. purpureo frequens.

*2868. 58. C. A. Hieraciatum, L. v. S., passim in foliis H. paniculati et maculati, Bethl.

C. maculis ime purpureis late effusis. Pseudoperidiis circinatis, in centro maculae, marginibus eleganter fimbriatis. Sporidiis aurantiis.

*2869. 59. C. A. Erigeronatum, L. v. S., rarius sed maximum in E. heterophyllo, Bethl.

C. maculis maximis lutescentibus, quasi crassis. Pseudoperidiis densim sparsis sine ordine elevatis. Sporidiis lutescentibus.

2870. 60. C. A. Asteratum, L. v. S., Syn. Car. 444, Lk. 143, vulgaris praesertim in A. paniculato. Optime cum hoc jungit Linkius C. Solidaginis, Syn. Car. 446, et C. Verbesinae 445. Sed C. Helianthi non hujus loci.

2871. 61. C. A. Helianthatum, L. v. S., Syn. Car. 450 in H. molli frequens. Rarum in Pennsylv.

*2872. 62. C. A. Trachelifoliatum, L. v. S., passim in foliis Helianthi trachelifolii, Bethl.

C. maculis late effusis lutescentibus aut rufis, confluentibus magnis. Pseudoperidiis in centro densissime aggregatis quasi stipatis et invicem adpressis, et inde subangulatis, satis elevatis; non fimbriato margine. Sporidiis flavis demum decolorantibus.

*2873. 63. C. A. Gnaphaliatum, L. v. S., memorabile et valde vulgatum sero autumno in foliis, (aversa pagina) etiam in caulibus lanatis Gnaphalii polycephali, Bethl.

C. hypophyllum, in lana foliorum et caulis primum involutum. Maculis plus minusve effusis lutescentibus. Pseudoperidiis tantum paucis, sed densim approximatis, saepissime etiam simplicibus,

longissimis, candidissimis, cylindricis, apice fimbriatis. Sporidiis aurantio-luteis. Est affinitas formae peridii cum C. Pini.

2874. 64. C. A. CLEMATITATUM, L. v. S., Syn. Car. 447—et in Pennsylv. lectum—species bona.

2875. 65. C. A. *Ranunculaceatum*, Lk. 150. Frequens Carolina (Syn. Car. 440) et Pennsylv. in variis Ranunculis, v. c. R. abortivo et aliis.

*2876. 66. C. A. CIMICIFUGATUM, L. v. S., pulcherrimum, rarius in foliis Cimicifugae racemosae, Bethl. In plantis talibus, fere omnia folia infestat.

C. maculis magnis orbiculatis luteis bullatis. Pseudoperidiis in pagina inferiori, concentricis, longissimis, cylindricis, apice primum clausis, demum subfimbriatis. Sporidiis aurantiacis albescentibus.

*2877. 67. C. A. HIBISCIATUM, L. v. S., in foliis Hibisci militaris, Bethl. cult. non rarum.

C. maculis orbiculatis lutescentibus, confluentibus. Pseudoperidiis, irregulariter sed densim sparsis tenuibus luteis. Sporidiis non compactis sed laxis lutescentibus.

*2878. 68. C. A. HEPATICATUM, L. v. S., vix ad C. quadrifidum, Lk. n. 152. In foliis degeneratis i. e. non trilobis, sed quasi reniformibus et multilobis Anemones hepaticae passim, Bethl.

C. Maculae omnino expers; folium autem cui insidet degeneratum. Pseudoperidiis maximis latis, margine exacte quadrifido revoluto, laciniis latis, brunneis. Sporidiis fuscobrunneis. Totum folium occupat.

2879. 69. C. A. *Geraniatum*, Lk. 156, in foliis Geranii maculati et G. carolinianae. Omnino idem cum europaeo. Syn. Car. 443.

2880. 70. C. A. IMPATIENTATUM, L. v. S., Syn. Car. 442, Lk. pag. 57, in nota etiam Bethl.

2881. 71. C. A. *Berberidatum*, Lk. 157, in Berberide canadense Carolina.

*2882. 72. C. A. *grossulariatum*, Lk. 162, valde frequens in variis speciminibus Grossulariae montibus Pennsylv.

2883. 73. C. A. HYPERICATUM, L. v. S., Syn. Car. 451, Lk. 159, passim etiam prope Philadelphia.

2884. 74. C. A. *Violatum*, Lk. 158, Syn. Car. 439, in foliis variarum Violarum Carolinae et Pennsylv. v. c. V. cucullatae, obliquae, hastatae et talium.

*2885. 75. C. A. PEDATATUM, L. v. S., quibusdam annis pervulgatum in foliis petiolisque Violae pedatae Bethl.

C. maculis minutissimis valde elevatis et pro ratione crassis purpurascentibus, fere undique tectis pseudoperidiis majusculis subaltis, subcylindricis. Sporidiis pallidis.

*2886. 76. C. A. SAGITTATUM, L. v. S., in foliis Violae sagittatae Bethl. Vix idem.

C. maculis purpureis, sed lutescentibus in aversa pagina. Pseudoperidiis parum elevatis, sine ordine sparsis in maculis bullatis, pallidis. Sporidiis concoloribus.

2887. 77. C. A. LUMINATUM, L. v. S., Syn. Car. *nitens*, 458, etiam frequens in Pennsylvania in Rubo. Folia quae cum tota planta ab hoc Aecidia infestantur (semper quidem ejusdem anni) omnino degenerata.

2888. 78. C. A. PODOPHYLLATUM, L. v. S., Syn. Car. 435. Linkius ob verba mea inaccurata in Syn. Car.—"sporidiis bilocularibus," inserta Calami lapsu, ex descriptione *Puccinia* Podophylli—fungi omnino alius—hoc Aecidium, omnium ingentissimum inter Puccinias locavit perperam. Occurrit saepe nostrum, maculis crassis bullatis, et folia lata Podophylli torta et deformata reddens—diametro 4—6 unciali. Pseudoperidiis in centro locatis, parum elevatis densissime stipatis, satis magnis et innumeris. Margine autem maculae semper sterili. Sporidia non bilocularia sunt.

*2889. 79. C. A. TENUE, L. v. S., in foliis Eupatorii ageratoidis rarius, Bethl.

C. macula lutescenti, evanescente, tenuissima. Pseudoperidiis sparsis, parum elevatis, sed, quod peculiare, in ambabus paginis prorumpentibus—clausis in superiori, apertis in inferiori. Sporidiis pallidis.

*2890. 80. C. A. EUPHORBIAE HYPERICIFOLIAE, L. v. S., in foliis E. hypericifoliae frequens Salem et Bethl. Non est idem cum C. euphorbiatum Lk. nec folia degenerata reddit.

C. maculis parvis, ime purpureis in pagina superiori, lutescentibus in inferiori. Pseudoperidiis aggregatis subconice elevatis et quasi excavatis. Sporidiis aurantiis.

*2891. 81. C. A. HOUSTONIATUM, L. v. S., rarius, sed ubi invenitur copiosissime in foliis caulinis et pedunculis Houstoniae coeruleae, Bethl.

C. sine distincta macula. Pseudoperidiis elevatis pallidis subconicis, apice contracto, et quasi excavato. Sporidiis aurantiacis. Infecta et sudegenerata planta tamen floret.

*2892. 82. C. A. Claytoniatum, L. v. S., in C. virginicae ex New York. Dr Torrey communicavit.
C. fere simplex et sine macula, occupans tota folia. Pseudoperidiis latis sparsis. Sporidiis aurantiacis.
*2893. 83. C. A. Pyrolatum, L. v. S., in pagina aversa foliorum Pyrolae rotundifoliae. Dr Torrey.
C. emaculata. Pseudoperidiis sparsis, totum folium occupantibus sed non transformantibus, pulvinato-elevatis pallidis aut aurantiis cum sporidiis. His demum excussis, linquuntur cavitates pezizomorphae in folio.
*2894. 84. C. A. Myricatum, L. v. S., in foliis et praesertim in petiolis Myricae ceriferae mihi communicatae ex New York ab amicissimo Dr Torrey.
C. maculis in petiolis valde intumescentibus atropurpureis, in siccis nigris ex quibus propullant crebra pseudoperidia, majuscula, latius aperta, brunnea, sporidiis lutescentibus repleta.
*2895. 85. C. A. Osmundatum, L. v. S., in frondibus Osmundae spectabilis invenit et communicavit Torrey, sed siccitate tam destructum ut non possit rite describi: species tamen evidenter distincta, sporidiis ferrugineis.
*2896. 86. C. A. Pyratum, L. v. S. rarius in foliis Pyri coronariae Bethl. Omnino non idem cum C. Roesteliti.
C. maculis in pagina superiori orbiculatis, rubris in ambitu ochraceis, centro nigrescentibus. In aversa pagina apparent pseudoperidia creberrima, subconcentrica, parum tantum elevata margine eleganter multifido-fimbriato; fimbriis rectis, nullimodo revolutis, divergentibus, pallidis. Sporidiis fuscis.
*2897. 87. C. A. sambuciatum, L. v. S., Syn. Car. 441, frequens in petiolis et foliis Sambuci canadensis, etiam Bethlehem. Diagnosis ulterior sequens.
C. maculis intumescentibus saepe maximis (i. e. 2 uncialibus) in petiolis, pallescentibus. Pseudoperidiis magnis, crebris elevatis, aurantiacis aut pallidis, margine fusco. Sporidiis aurantiofulvis, decolorantibus. In foliis omnia multo minora—pseudoperidiis densim aggregatis.
2898. 88. C. A. Urticatum, Lk. n. 169. Syn. Car. 436, in Urtica rarissime. Salem, etiam ibidem in Cynoglosso amplexicaule.

γ. Subgen. ROESTELIA AUT CERATITES.

2899. 89. C. R. *Cylindrites*, Lk. n. 172. Syn. Car. 432, sub hoc nomine complectuntur sequentia Caeomata specie forsan separanda.
α. C. *Crataegi punctatae*, pseudoperidiis divergentibus fibrosis, medio intumescentibus—albidis. Pennsylvania.
β. C. *Crataegi arborescentis* maculis parvis rubris pseudoperidiis non fibrosis, difformibus fuscorubris. Prope Fayetteville Carolinae.
γ. C. *Oxyacanthae* maximum, valde frequens prope Philadelphia in saepibus.
δ. C. *Mali* in foliis Pyri mali et coronariae, maculis parvis sed effusis. Pseudoperidiis minutis.
2900. 90. C. R. *Roestelites*, Lk. 173. Aecid. cancellatum, Syn. Car. 433. Bethlehemis est pomarium antiquum, gaudens arboribus Pyri mali ingentibus. Sero autumno pluria folia horum arborum per 6—7 annos, ita tecta vidi ab hoc fungo, ut e longinquo folia rubra videntur.
2901. 91. C. R. Fraxinites, L. v. S., Syn. Car. 430, Lk. 170, Aecidium fraxini. Potius huc locandum, passim Beth. in fraxinis foliis.
2902. 92. C. R. Botryapites, L. v. S., rarissime obvium in foliis Aroniae botryapium Bethlehem; sed ubi occurrit—satis frequens.
C. omnino distinctum—macula flavescent; ochracea satis effusa. In aversa pagina observantur pseudoperidia centralia aggregata ut tuberculi, globosa, luteoviridia, primum obtuse conica et quasi clausa, demum subaperta et in ore multo-fimbriata, fimbriis spadiceis flexuosis. Sporidiis parcis umbrinis. Pseudoperidiis paucis, imo interdum unico.

δ. Subgen. PERIDERMIUM.

2903. 93. C. P. *Pinicum*, Lk. 175, Syn. Car. 456. In Pennsylvania prope Philadelphia et alibi non rarum. Specimina ampla, pedalia, in ipso trunco Pini inopis mihi obvia, analogon praebuerunt Gymnosporangis Juniperini.
*2904. 94. C. P. germinale, L. v. S., rarissime in germinibus Rosae. Clarissimus Collins mihi communicavit.

C. pseudoperidiis longissimis, cylindraceis, subcompressis demum candidis, fimbriatis, fimbriis ad fundum fissis subsolutis. Sporidiis effusis pallidis. Pseudoperidia orientia ex foveolis in germine, sine ulla macula, saepe tres lineae longa sunt.

Genus 212. Puccinia. Lk. et *Dicaeoma*, Fr.

2905. 1. P. *Graminis*, Lk. n. 1, Syn. Car. 492, Vulgatissima etiam Pennsylvaniae in graminibus.

*2906. 2. P. *striola*, Lk. n. 2, in variis Cyperaceis et graminibus Bethlehem.

2907. 3. P. Arundinariae, L. v. S., Syn. Car. 487, Lk. p. 68, in nota. Optima species etiam in Miegia (Arundinaria) culta in Horto Bartrami Philad.

*2908. 4. P. *punctum*, Lk. n. 3, in Caricibus et Scirpis, Bethl.

*2909. 5. P. *Scirpi*, Lk. n. 4, in variis Scirpis, Bethl.

*2910. 6. P. Sorghi, L. v. S., frequens in foliis Sorghi et Zeae cultae, Bethl.

P. emaculata. Acervis latis difformibus varie lobatis, primum epidermide tectis, demum denudatis sed in margine cinctis et tum epidermide lacerata Acervis saepe etiam, quasi versus centrum internum lobatis—2—4 lineas longis latisque. Majores acervi ad nervos foliorum occurrunt. Sporidiis aterrimis grossis, breviter pedicellatis.

*2911. 7. P. Andropogi, L. v. S., frequentissima autumno in foliis culmisque etiam vaginis variarum specierum Andropogi, Bethl.

P. maculis obliteratis, acervis dense aggregatis, elevatis, fuscis, obtusis, linearibus, abbreviatis. Sporidiis fuscis. Quanquam non confluit, tamen fere tota folia occupat.

*2912. 8. P. emaculata, L. v. S., passim in foliis Panicorum, praesertim Panici pubescentis in campis Bethl. et Philad.

P. omnino emaculata; primum acervis totis tectis rarioribus sparsis erumpentibus; demum saepe confluentibus, minutis, abbreviatis, angustis, parallelis, utrinque plerumque acuminatis. Sporidiis aterrimis, minoribus; aquae immersis, fuscescentibus.

*2913. 9. P. Junci, L. v. S. in culmis J. effusi, Bethl. freq.

P. vix maculata; acervis irregularibus prorumpentibus epidermide subtectis, latiusculis, applanatis. Sporidiis grossis nigrofuscis.

*2914. 10. P. Windsoriae, L. v. S., in foliis Windsoriae (Poae) quinquedentatae, Bethl.

P. maculis lutescentibus, demum evanidis. Acervulis longis, linearibus, undulatis, prominulis, ex epidermide prorumpentibus, non confluentibus. Sporidiis compactis e purpureo-atrofuscis, longe pedicellatis.

*2915. 11. P. Zizaniae, L. v. S., in foliis dejectis Zizaniae. Kaign's point prope Philad.

P. emaculata, minuta, primum tecta, demum lineatim prorumpens epidermide in ambitu acervulorum persistente, acervis elongatis, abbreviatis, atris, luce obversis, fuscescentibus. Sporidiis laxis, circum circa saepe sparsis, breviter pedicellatis, tenuibus, et multo minoribus quam in affinibus speciebus.

2916. 12. P. Smilacis, L. v. S., Syn. Car. 494, etiam in Pennsylv.

2917. 13. P. *Polygonorum*, Lk. n. 6, Syn. Car. 488, in P. pennsylvanico, et P. virginico etiam Penn.

*2918. 14. P. concentrica, L. v. S., frequentissima sub finem autumni in foliis semivivis et emortuis P. *coccineae*, Bethl.

P. maculis maximis, confluentibus ruberrimis in pagina superiori, pallidioribus in aversa. Acervulis creberrimis concentrice in his aggregatis, primum subsolidis, nigrouitentibus, demum sporidiis solutis minutis fusco-nigris. Verisimiliter est P. Polygoni amphibii Decandollei—sed certissime specifice diversa ab antecedente.

*2919. 15. P. bullata, L. v. S., Syn. Car. 501, Lk. n. 8. In Pennsylvania obvia ingens, bi- imo triuncialis, in caulibus prasertim Vernoniae novaeboracensis.

*2920. 16. P. Pycnanthemi, L. v. S., satis affinis P. Clinopodii, in P. incano frequens, Bethl.

P. maculis purpureis minutis persistentibus. Acervulis parvis, fuscis. Sporidiis laxis longe pedicellatis.

*2921. 17. P. *compositarum*, Lk. n. 19, vulgata Bethlehem praesertim in caulibus et foliis Cnicorum aut Cirsiorum (P. *caulincola*) emortuorum.

*2922. 18. P. *maculosa*, Straus. Bethl. passim in foliis Prenanthis aut Hieracii. Omnino distincta a priore maculis latis albis, sporidiis multo pallidioribus.

2923. 19. P. Helianthorum, L. v. S., Syn. Car. 495, Lk. p. 74, bene distincta—frequens in variis Helianthis et Pennsylv. maxime evoluta in emortuis foliis. In H. tuberosa culta, tota plerumque folia occupat aversa pagina.

2924. 20. P. Heliopsidis, L. v. S., Syn. Car. 493, Lk. p. 74, et Pennsylvania—optime distincta.

2925. 21. P. Verbesinae, L. v. S., Syn. Car. 496, Lk. p. 74, nondum in Pennsylvania—bona species.

*2926. 22. P. Vernoniae, L. v. S., vulgatissima in Vernoniis Bethl.

P. emaculata. Acervis pulvinatis majusculis et colore sporidiorum amoene ferrugineo differt ab P. Helianthi. Occurrit etiam interdum in Helianthis.

2927. 23. P. Xanthii, L. v. S., Syn. Car. 500, Lk. n. 23. Etiam frequens in Xanthii foliis in Pennsylvania. Pulchra et e longinquo conspicua. Acervis plerumque concentricis, et in centro maculae aggregatis.

*2928. 24. P. Helenii, L. v. S., rarior sed egregia in foliis Helenii autumnalis, Bethl.

P. maculis flavo-lutescentibus expansis. Acervis pulvinatis sparsis et invicem approximatis, convexis, primum brunneis, demum eleganter castaneis. Sporidiis satis grossis compactis.

*2929. 25. P. Silphii, L. v. S., ex Carolina missa in foliis S. Trifoliati ab amico Denke.

P. maculis minoribus purpureis. Acervis crassis pulvinatis, confluentibus, aggregatis, nigris. Sporidiis compactis concoloribus.

*2930. 26. P. Asteris, L. v. S., formosa species frequens in foliis A. paniculatae Bethl.

P. maculis bullato-impressis, luteis, non valde expansis. Acervulis creberrimis, subconcentrice sitis, eleganter fuscis. Sporidiis sulaxis concoloribus.

*2931. 27. P. Kuhniae, L. v. S., vulgata in foliis Kuhniae, Bethlehem.

P. absque ulla macula. Acervis amphigenis pulvinatis densim aggregatis, nigrofuscis. Sporidiis majusculis laxis, longe pedicellatis. An Phragmidium?

*2932. 28. P. investita, L. v. S., frequens observata cum Aecidio gnaphalitatum in foliis tomentosis Gnaphalii polycephali. Bethl. Tomento omnino involuta.

P. absque macula; acervulis minutis sparsis subrotundis nigerrimis, vix initio per tomentum conspicuis, interdum etiam aggregato-confluentibus. Sporidiis compactis, aterrimis. Acervulorum superficie quasi rugulosa.

2933. 29. P. Galii, L. v. S., Syn. Car. 499, Lk. p. 76, rara species sed satis distincta—non Sclerotium

*2934. 30. P. Myrrhis, L. v. S., in foliis et caulibus Myrrhis procumbentis. Bethl.

P. emaculata. Acervis crebris minutis, epidermide rupta cinctis, pulvinatim applanatis. Sporidiis laxissimis luteofuscis.

*2935. 31. P. *Bullaria*, Lk. n. 32, in caulibus Hyssopi nepetoidis rara, Bethl.

*2936. 32. P. *anemones*, Lk. n. 33, in foliis A. quinquefoliae rarissima obvia, sed distinctissima, Bethl.

2937. 33. P. solida, L. v. S., Syn. Car. 486. Anem. virginian., frequens in foliis Anemones virginianae Salem et Bethl.

P. emaculata. Acervis sparsis, majusculis, tam compactis ut solida se exhibeant, nigris. Sporidiis demum subsolutis. Acervi dispersi per totum folium, primum lutescunt et quasi impressi sunt.

2938. 34. P. *circaeae*, Lk. 43, Syn. Car. 491, vulgaris et. Bethl.

2939. 35. P. aculeata, L. v. S., Syn. Car. 489. P. podophylli, etiam vulgaris in Podophyllo. Ob sporidia aculeata optime distincta.

2940. 36. P. Lespedezae procumbentis, L. v. S., Syn. Car. 497, Lk. p. 83, species eximia et in Pennsylvania.

2941. 37. P. Lespedezae violaceae, L. v. S., Syn. Car. 498, Lk. p. 83, multo frequentior in L. violacea quam L. polystachia, etiam Novae Cesareae.

*2942. 38. P. Phaseoli trilobi, L. v. S., in foliis P. trilobi ex New York missis. Affinis videtur P. fabae.

P. acervulis minutis, hypogenis, epidermide subtectis. Sporidiis nigris, macula nulla.

*2943. 39. P. *Fabae*, Lk. n. 45, in foliis V. fabae, Nazareth.

*2944. 40. P. Hyssopi, L. v. S., in foliis H. scrophulariaefolii, Bethl. passim.

P. maculis lutescentibus effusis. Acervis aggregatis compactis, fuscis, quasi circinatis et undulatim inter se confluentibus, primum nigrescentibus, parvulis sed copiosim in folio occurrentibus. Sporidiis fuscis, demum laxioribus.

*2945. 41. P. Potentillae, L. v. S., non Phragmidium, Lk. in foliis exsoletis P. canadensis aversa pagina, Bethl.

P. acervis minutis. Sporidiis fuscis demum nigris prorumpentibus, brevipedicellatis. Macula fere evanida.

*2946. 42. P. Ari triphylli, L. v. S., in pagina aversa foliorum A. triphylli, Bethl.

P. maculis pallidis, latissimis, in margine foliorum. Acervis majusculis, saepe confluentibus, primum tectis ab epidermide, mox rupta. Sporidiis brunneofuscis, laxim affixis et Urediniformibus—sed tamen vera Puccinia.

Genus 213. Phragmidium.

Memorabile dictu, nunquam Phragmidium mihi obvium in foliis Rosarum aut Ruborum Americae, sed sequens species vulgatissima ad Phragmidia pertinet sine dubio.

2947. 1. P. Hedysari, L. v. S., Syn. Car. 503, frequens occurrit in foliis H. paniculati et aliorum, Bethlehem et Salem.

P. acervulis minutis sed crebris per totum folium sparsis, epidermide innatis. Sporidiis longe pedicellatis, pedicello articulato, pellucido, ceterum opacis, ovatis, obtusis, non cylindricis, obscure septatis, nec articulato-constrictis, fusco-nigris.

Genus 214. Spilocaea.

*2948. 1. S. *fructigena* aut *Pomi*, Lk. p. 86, n. 1. Non rara in pomis "Newton Pippin," New York et Bethl.

*2949. 2. S. *Scirpi*, Lk. n. 2, in Scirpo acuto, Hope, Jersey, et Philadelphia.

2950. 3. S. concentrica, L. v. S., in cortice Peponum putridorum, Bethl. Optime aut evoluta mense Octobri prope Philadelphia in talibus.

S. maculis aterrimis fere totam corticem sub epidermide occupans, acervis inter se confluentibus, demum epidermide eleganter quasi in pluribus circulis concentricis rumpente-subundulatis, in conspectum veniunt massae nigrae subsiccae, conglutinatae ex sporidiis pellucidis cylindricis minutis, non septatis. Macula quaeque diametro gaudet subunciali.

Genus 215. Septaria.

*2951. 1. S. *Ulmi*, Lk. p. 87, n. 1, in foliis Ulmi fulvae Bethl. acervis majusculis compactis, amphigenis. Saepe occurrit, sed rarissime mihi obvia bene evoluta.

*2952. 2. S. *Oxyacanthae*, Lk. n. 2, in foliis Pyri, Bethlehem.

2953. 3. S. nigricans, L. v. S., Lk. p. 83, nota, Syn. Car. 513. *Stilbospora epiphyllum.* Procul dubio huc pertinet. Vulgatissima et Bethl. in foliis castanearum.

Genus 216. Hypodermium, Lk. *Schizoderma*, F. S. V. p. 194.

*2954. 1. H. *sparsum*, Lk. p. 88, n. 1, in foliis Abietis nigrae in Horto Prince, New York.

*2955. 2. H. *sulcigenum*, Lk. n. 2, in foliis P. inopis, Jersey.

*2956. 3. H. effusum, L. v. S., in foliis Pini Strobi dejectis, Bethl.

H. acervis tenuibus effusis, folium plerumque transversim maculantibus, nigrofuscis.

Genus 217. Melanconium.

2957. 1. M. *ovatum*, Lk. p. 90, n. 1, non rarum cum varietate *pyriforme* in corticibus, Bethlehem et Carol. Stilbospora ovata, 509.

*2958. 2. **M. *apiocarpum***, Lk. n. 2. In ramulis putridis, Bethl.

*2959. 3. **M. *ovoideum***, Lk. n. 3, in ramis passim, Bethl.

*2960. 4. **M. *effusum***, Lk. n. 4, in cortice Pruni hiemalis, ibid.

2961. 5. **M. *sphaerospermum***, Lk. n. 6, Syn. Car. Stilbosp. 512, etiam in Horto Bartrami, Philad.

2962. 6. **M. *sphaeroideum***, Lk. n. 7, Syn. Car., Stilbosp. 510, et Bethlehem in junioribus ramulis.

*2963. 7. **M. *conglomeratum***, Lk. n. 9, in ramis Mori albae Bethlehem.

*2964. 8. **M. VISCOSUM**, L. v. S., in ramulis emortuis Robiniae viscosae frequens et cum illis viscosa, Nazareth in horto.

M. acervis sporidiorum provectiori aetate cum epidermide assurgentibus, sphaeriaemorphis, et quasi poro centrali apertis, quamvis expertis ullius veri perithecii, sed epidermide solummodo inclusis. Sporidiis cylindrico-ovatis effusis demum per viscositatem ramuli, subpellucidis non septatis.

*2965. 9. **M. SASSAFRAS**, L. v. S., in junioribus ramis caesorum arborum Lauri Sassafras, totam epidermidem circumcirca fuligineo-fusco colore tingens, Bethl.

M. acervulis globosis, cum epidermide assurgentibus ut tubercula sparsa, demum ruptis, et longe lateque spargentibus sporidia opaca ovata.

*2966. 10. **M. GRISEUM**, L. v. S., in ramis et stipitibus Rubi Idaei Hortor., Bethl.

M. acervulis minutis, atris, prorumpentibus ex epidermide, demum disco applanato. Sporidiis minutissimis globosis, subpellucidis, colore griseo epidermidem tingentibus, in quam sparguntur denique.

*2967. 11. **M. DOTHIDEA**, L. v. S., in variis ramis praesertim Mori, Bethl. Distinctissima.

M. acervulis majoribus prorumpentibus, epidermide cinctis, disco aut superficie undulatim tuberculosa—Dothideam Sambuci referentibus, aterrimis, compositis sub microscopio ex Sporidiis majusculis, pellucidis non septatis, cylindricis, apice utrinque rotundato, fuligineis.

*2968. 12. **M. TRUNCATUM**, L. v. S., in epidermide Sambuci canadensis passim, Bethl.

M. acervulis minoribus, sphaeriaemorphis, prorumpentibus ex epidermide, apice truncatis, aterrimis, demum subrotundis, effusis. Sporidiis pro ratione majoribus, ovatis et subdifformibus fuscis. Affine M. conglomerato. Gregarium quidem, sed non confluens.

*2969. 13. **M. PERITHECIATUM**, L. v. S., increscit ipso ligno denudato passim, Bethl.

M. referens Sphaeriam udam. Ligno impositos acervos, aggregatos efformans; e pseudoperitheciis pluribus conicis aut irregularibus compositi sunt acervuli, quasi acutim interdum ostiolatis, demum pertusis, saepe lineatim confluentibus. Aqua immersa, tota massa diffluit in Sporidia majora globosa aut ovata, nigro-fuscescentia non septata, nec vestigium adest pseudoperithecii.

Nota.—Acutissimus Linkius summo jure de nostris fungis in Syn. Car. 506 et 511, sub nomine Stilbosporae maximae, et S. pulvinatae an verae Stilbosporae i. c. Melanconia dubitat. S. *maxima* videtur verum Exosporium Linkii, et S. *pulvinata* nil est quam *Monilia fusconigra* hujus libelli. Non rite intellexi olim Genus Stilbosporum.

Genus 218. DIDYMOSPORIUM.

*2970. 1. **D. *complanatum***, Lk. p. 93, n. 1, in ramis dejectis passim, Bethl. Eximium in Hyperici frondosi ramis.

*2971. 2. **D. *elevatum***, Lk. n. 2, in cortice betulino, Salem et Bethl.

*2972. 3. **D. PEZIZOIDEUM**, L. v. S., passim occurrit in cortice putrido ramorum Mori albae, gregarie crescens, Bethl. An novum genus?

D. Sporidochio pezizoideo, marginato, cinereo-atro; in acervis densim aggregatis, et epidermide stellatim rupta cinctis. Disco 1—2 lineari diametro, impresso. Forma acervulorum cum sporidochio quasi angulata, ob mutuam pressionem. Juniore aetate sporidochium undique sporidiis crebris nigris, uniseptatis onustum. Denique sporidia fere coalescunt cum sporidochio indurato et subcorneo intus, sectione, albido. Ad pedalem longitudinem aggregati acervi ambiunt ramos. Cum cortice fibroso faciliter evelli possunt.

*2973. 4. **D. CELTIS**, L. v. S., in ramis valde corruptis Celtis occidentalis, Bethl.

D. sporidochiis subfasciculatim fere ut ostiola Sphaeriarum circumscriptarum et cortice prominentibus, difformibus, nigris. Sporidiis compactis, didymis, utrinque subacutis, fuscescente-nigris creberrime profluentibus, lignum et corticem inquinantibus

*2974. 5. D. EFFUSUM, L. v. S., in cortice suberoso putrido Ulmi fulvae, Bethl.
D. Sporidochiis subelongato-ovatis, convexis, sub Hysteriomorphis, interdum rotundatis, disco impressis, nigris, plerumque prorumpentibus ac confluentibus, epidermide cinctis, sed etiam omnino liberis. Sporidiis copiosis pellucidis, didymis profluentibus, lateque effusis.

*2975. 6. D. ERUMPENS, L. v. S., in ramis Celastri per epidermidem erumpens, Bethl.
D. sporidochiis ovato-ellipticis, erumpentibus epidermide cinctis, disco impresso et passim colliculoso saepe confluentibus et aterrimis. Sporidiis crebris, oblongis, didymis. Sporidochio 1—2 lineari.

*2976. 7. D. MINUTISSIMUM, L. v. S., vulgaris in cortice Populi italicae et Platani, Bethl.
D. sporidochiis in acervis minutissimis longe lateque ex epidermide more Sphaeriarum erumpentibus nigris, epidermide subtectis, subglobosis. Sporidiis minutissimis globosis sed uniseptatis aut quasi ex duobus hemisphaeris.

*2977. 8. D. ACUMINATUM, L. v. S., non rarum in cortice juniore ramorum Betulae, Bethl.
D. sporidochiis in acervis minutis subcorticalibus transversim prorumpentibus. Sporidochio intus albo spurio. Sporidiis didymis crebris utrinque acuminatis. Structura interna non dissimilis D. elevato, sed multo minor.

*2978. 9. D. CALYCANTHI, L. v. S., passim in ramulis Calycanthi emortui, Bethl.
D acervis elliptico-difformibus, confluentibus, longitudinaliter erumpentibus, epidermide cinctis. Sporidochio irregulari, subconvexo, applanato, fusco-nigro. Sporidiis oblongis, utrinque subacutis, didymis.

*2979. 10. D. CORTICALE, L. v. S., tenuissime effusum in cortice glabrato Rhois, Bethl.
D. acervulis tenuissimis applanatis, plerumque orbiculatis insuper sporidochiis spuriis minutis, tuberculos referentibus. Sporidiis didymis, nigris, quasi ex duobus globulis.
N.B. D. Hedysari, L. v. S., Syn. Car. 505, nullimodo hujus loci est.

Genus 219. ASTROSPORIUM. Kz., S. V. F. p. 192.

2980. 1. A. *vulgare*, Kunz. in Regensb. Bot. Zeit. 1810, p. 225 et Syn. Car. n. 507. Fungum distinctissimum in Carolina repertum, nondum in Pennsylvania observavi.

Genus 220. STILBOSPORA.

2981. 1. S. *macrospora*, Lk. p. 95, n. 1, Syn. Car. 508 et Bethl.

*2982. 2. S. *angustata*, Lk. n. 2, in cortice ramorum Quercus non frequens, prope Nazareth.

*2983. 3. S. QUADRISEPTATA, L. v. S., copiosim propullans ex epidermide majorum ramorum et trunci Platani occidentalis caesi nec jam corrupti, Bethl.
S. acervis primum sub epidermide inde varioloso-bullata effusis, sporidochio spurio nigro centrali; demum prorumpentibus et circa circum sub epidermide et in ea spargentibus magnam copiam sporidiorum subconglutinatorum. Sporidiis oblongis, fuligineis, semipellucidis, eleganter quadriseptatis, aut quasi ex quatuor globulis internis conformatis.

*2984. 4. S. MULTISEPTATA, L. v. S., rara, in ramis querneis obvia, distinctissima, prope Naz.
S. acervis in cortice satis effusis, parum elevatis; sporidochio peritheciato cortice ime ad lignum usque immerso, subsphaeriaemorpho, et quasi evacuato, post effluxum sporidiorum. Sporidiis magnis lineari-subulatis, utrinque incurvis acuminatis, multiseptatis, et lignum aut corticem inquinantibus, ceterum aterrimis subpellucidis.

*2985. 5. S. STAPHYLEAE, L. v. S., frequens in junioribus ramulis Staphyleae, Bethl.
S. acervis minoribus, rotundatis, nidulantibus sub epidermide elevata; demum rima dehiscente profluunt crebra sporidia, cano-fusca, subpellucida, elongato-elliptica, utrinque subacuta, multiseptata Acervis ceterum gregarie sparsis, numerosis.

Genus 221. CRYPTOSPORIUM.

*2986. 1. C. *atrum*, Lk. p. 96, n. 1, passim in culmis graminum, Bethl.

*2987. 2. C. *aurantiacum*, Lk. n. 2, in receptaculis Zinniarum in Hortis mihi obvium, Bethl.
*2988. 3. C. PSEUDOACACIAE, L. v. S., an hujus generis? In foliis Robiniae, Bethl.
C. acervulis 1—2 linearibus, rotundis, parum elevatis nigris, maculam efficientibus, superficie quasi punctulatis. Aquae immersum, solvitur in sporidia minutissima fusca. Insuper folium nec sub epidermide crescit.

Genus 222. FUSIDIUM.

*2989. 1. F. *aureum*, Lk. p. 97, n. 4. Rarum, in Sclerodermate putrido obvium in monte Pocono.
*2990. 2. F. *Buxi*, Lk. n. 3, non infrequens in foliis Buxi, Bethlehem.
*2991. 3. F. *griseum*, Lk. n. 1, non rarum—in foliis aridis Quercuum, Bethl.
*2992. 4. F. CAESIUM, L. v. S., satis frequens in emortuis foliis Castanearum, Bethl.
F. acervis late effusis tenuibus, caesiis. Sporidiis laxiter affixis, longiusculis, fusiformibus vix septatis.
*2992. 5. F. TENUISSIMUM, L. v. S., occurrit passim in foliis deciduis quercinis, Bethl.
F. acervis tenuissimis late effusis, griseis aut cinereis. Sporidiis fusiformibus, cinereis, minutissimis, non septatis, Folia quasi pruina tenuissima afflata sese ostendunt.
*2993. 6. F. EPIDERMIDIS, L. v. S., rarius in epidermide glabro ramorum, Bethl.
F. acervis majusculis, subdeterminatim orbiculatis, confluentibus, candido-lacteis, demum pallescentibus. Sporidiis compactis fusiformibus.
*2994. 7. F. FARINA, L. v. S., late effusum in epidermide non corrupta, Salem.
F. acervis longe lateque effusis, candidissimis, indeterminatis, crassiusculis, farinam densim instratam mentientibus. Sporidiis subcompactis, fusiformibus, septatis, uno apice sensim incrassatis.
*2995. 8. F. FUMAGO, L. v. S., late effusum in foliis vigentibus Ribidis, Nazareth.
F. acervis effusis, aterrimis, omnino Cladosporium Fumago revocantibus. Sed lente adhibita, compositi sunt, ex innumeris nudis atris pellucidis sporidiis, brevibus fusiformibus curvatis, obscure septatis, utrinque interdum subacutis, interdum obtusatis.

Genus 223. CERATOSPORIUM. L. V. S. Novum Genus.

Sporidia majuscula (¼ lin.) clavata, pluribus basi coalitis, quasi cornu damae assurgentia, fusca, splendentia sicca opaca, madida subpellucida, multiseptata, aut pluria granula quasi in sporangiolo pellucido inclusa exhibentia.

*2996. 1. C. FUSCESCENS, L. v. S., in epidermide corrupta Rhois typhinae et glabrae et insuper Sphaerias ejusdem fasciculatim crescit, Bethl.
C. longe lateque effusum. Sporidiis basi coalitis, interdum quasi ex horizontali trunco, clavatis, saepe flexuosis, apice subattenuatis.

Genus 224. MYXOSPORIUM.

2997. 1. M. *croceum*, Lk. p. 99, Syn. Car. 293, sub nomine Nemaspora crocea. Vulgatum etiam Bethl. in ramis, Fagineis, Betulinis, &c.

Genus 225. CLASTERISPORIUM. L. V. S., Novum Genus.

Sporidiis maximis, simplicibus, falciformibus, brevi-pedicellatis, teretibus, multiseptatis, aut quasi in sporangiolo pellucido pluria granula complectentibus; primum opacis, demum pellucidis, atrofuscis cum nitore. Quasi Coryneum non conjunctum.

*2998. 1. C. CARICINUM, L. v. S., valde frequens autumno n foliis majorum Caricum, v. c. C. lacustri, &c. Bethlehem.

C. acervis minoribus ac majoribus, effusis, saepe ad bi vel triuncialem longitudinem confluentibus occupat folia, omnino ceterum libere impositis nec ullimodo innatis, nigrofuscis. Sporidiis tam maximis, ut nudo oculo distinguentur sibi indeterminatim incumbentibus ingenti copia. Pedicello pellucido. Apice sporidiorum obtuso.

Series II. Tuberculariini.

Genus 226. Tuberculaeia.

2999. 1. T. *vulgaris*, Lk. p. 99, n. 1, Syn. Car. 295, ubique.

*3000. 2. T. *lutescens*, Lk. n. 2, in ramis Araliae, Bethl.

3001. 3. T. *minor*, Lk. n. 3, frequens in Castaneis, Syn. Car. 298, etiam Bethl.

*3002. 4. T. *mutabilis*, Lk. n. 4, in Mori ramulis, Bethl.

3003. 5. T. *granulata*, Lk. 5, Syn. Car. 296, frequens et Bethl.

3004. 6. T. dubia, L. v. S., Syn. Car. *nigrescens* 301, Lk. n. 7, non rara in variis ramis et Bethlehem. Colore atro bene distincta. Sporidia aquae immersa diffluunt ut in ceteris.

*3005. 7. T. *floccosa*, Lk. 8, in Rhois typhinae ram., Bethl.

*3006. 8. T. *nigricans*, Lk. 9, in lignis emortuis Litiz.

*3007. 9. T. *ciliata*, Lk. 10, (non Syn. Car. 300) in ligno carioso et in ramulis Vitis, Bethlehem.

*3008. 10. T. *leeoides*, Lk. n. 11, in duro caule Brassicae, Bethlehem.

*3009. 11. T. *herbarum*, Lk. n. 12, in caulibus emortuis Artemisiae emortuae, Bethl.

*3010. 12. T. *menispermi*, Lk. n. 13, in ramis Menispermi et aliorum sarmentosorum Fruticum, Bethl.

*3011. 13. T. *carmentorum*, Lk. p. 104, in Zea Bethl. Stratum sporidiorum vidi—et sine dubio est hujus loci.

*3012. 14. T. *pusilla*, Fries. et Kunze, minutissima, in junioribus ramulis tenerrimis, Bethl.

*3013. 15. T. pezizoidea, L. v. S., amicissimus Dr Torrey ex New York misit speciem valde mirabilem —in ramis populinis?

T. Sporidochiis, fasciculatim confluentibus, maximis, pezizoideis, undulato-plicatis, ex epidermide prorumpentibus et ad uncialem longitudinem irregulariter confluentibus, pede crasso suffultis, substantia indurato-cornea, strato sporidifero compacto incarnato purpureo, subnitente, sed superficie subpruinosa. Intus albescunt et aetate subpulverulenta evadunt sporidochia. Talis cupula non confluens diametrum plus quam bilinearem habet et Pezizam margine obtuso, undulato plicato disco refert.

*3014. 16. T. subpedicellata, L. v. S., in ramis emortuis Lycii hortorum obvia, Bethl.

T. Sporidochiis, minutis pallide lateritiis, longiuscule pedicellatis, epidermide circum pedicellum elevato, capitulo aequali ex epidermide protuberante globoso. Pedicello quasi linea rubra a capitulo separato. Strato sporidifero, ruguloso.

*3015. 17. T. Celastri, passim copiosim propullans ex ramis et sarmentis Celastri, Bethlehem.

T. Sporidochiis majusculis regularibus, subrotundo-turbinatis, breviter pedicellatis. Strato sporidifero primum fusco, mox atro, intus rubescente. Pedicellis cortici interiori adnatis, arctim ab epidermide cinctis, cinereis. Capitulo impresso, applanato, rugoso, tuberculoso cum strato sporidifero coalito, quod ubi pedicellum intus demum pulveraceo-fatiscentem attinget, linea nigra circumscriptum.

*3016. 18. T. difformis, L. v. S., in spinis Crataegi cujusdam in Horto Botanico, Philad.

T. Sporidochiis prorumpentibus, difformibus, aggregatis et confluentibus, fusconigris, rugosis, Strato sporidifero crassiusculo concolore. Sporidochiis minoribus, intus fusco-ferrugineis.

*3017. 19. T. radicalis, L. v. S., in efossis radicibus arborum—magna copia, Bethl.

T. Sporidochiis multiformibus, majusculis, prorumpentibus ex epidermide radicum, difformibus nempe et rotundatis, granuloso-tuberculosis, 2—3 lineari diametro, applanato-depressis et tortis. Strato sporidifero rubro fuscescente, demum nigricante, intus albido. Basi saepe floccosa. Adsunt sporidochia alia minora, in ipso ligno, convexa nigra et longitudinaliter confluentia.

*3018. 20. T. FATISCENS, L. v. S., in tenera epidermide ramorum dejectorum, Bethl.
T. Sporidochiis minutis, pulvinatis, sessilibus, incarnatis demum exalbescentibus, et fere omnino in pulverem fatiscentibus, intus fuscis et subconfluentibus. Strato sporidifero magis colorato, crassiusculo.
*3019. 21. T. CALYCANTHI, L. v. S., vulgatissima in ramis Calycanthi in hortis Bethl., satis affinis T. vulgari.
T. sporidochiis regularibus, globosis, rubris, magnitudine T. vulgaris, suffultis pedicellis nigrescentibus subcupularibus. Strato sporidifero ut in T. vulgari.
*3020. 22. T. SUBDIAPHANA, L. v. S., rarior in putridis stipitibus Vitis, Bethl.
T. Sporidochiis subrotundis, globosisve, primum pallide rubris, subdiaphanis; demum nigricantibus aut fuscescentibus. Strato sporidifero satis crasso. Basi strigoso-floccosa. Aetate demum fatiscit.

Genus 227. FUSARIUM.

*3021. 1. F. *pallens*, Lk. p. 105, n. 1, var. *pulvinatum*, in cortice ex New York communicavit Dr Torrey.
*3022. 2. F. *roseum*, Lk. n. 2, in caudicibus Araliae spinosae, Bethlehem in hortis cultae.
3023. 3. F. *ciliatum*, Lk. n. 3, Syn. Car. 300. Tubercularia et Bethlehem obvia in Cucurbitis putridis; etiam in germine Rosae putrido.
*3024. 4. F. *stilbaster*, Lk. n. 4. Rarissimum in radiculis mihi obvium, Bethl. Optima species.
*3025. 5. F. *oxysporum*, Lk. n. 5. Vulgare in effoetis leguminibus Phaseoli, Bethl.
*3026. 6. F. *lateritium*, Lk. n. 6, in truncis et ramis, Bethl.
3027. 7. F. *heterosporum*, Lk. n. 7, Syn. Car. 321. *Sclerotium Paspali*. Frequens etiam Pennsylvania in seminibus immaturis Paspalorum.
*3028. 8. F. PYRINUM, L. v. S., in Germania aeque ac Pennsylvania rarius repertum in putridis Malis per hiemem in arbore expositis.
F. Sporidochio expanso coccineo, sicco quasi vernicoso, satis crasso—aqua adhibita diffluente in sporidia minutissima fusiformia
*3029. 9. F. EFFUSUM, L. v. S., in ramulis emortuis Hyperici frondosi Hortis, Bethl.
F. Sporidochio subgelatinoso, latissime effuso, tenuissimo Thelephoram referente, pallidorubente. Sporidiis densissimis fusiformibus ac cylindricis pellucidis.
*3030. 10. F. INSEPTATUM, L. v. S., in cortice Daphnidis Mezerei emortui, Hort. Bethl.
F. Sporidochio verrucoso, expanso, praesertim transversim sito, lutescenti-rubro, rotundato, margine sublibero. Sporidiis fusiformibus inseptatis pellucidis.
*3031. 11. F. COCCINEUM, L. v. S., in cortice castaneo passim observatum, Nazareth.
F. Sporidochiis aggregatis, granulatim tuberculosis, difformibus gelatinosis, coccineis, demum induratis, basi expansis in massam quasi Thelephoroideam. Sporidiis globosiusculis, uno latere acutis, minimis, diaphanis. Caespites efformat ¼ unciales, circum basin floccosas.
*3032. 12. F. CAPITATUM, L. v. S., in ligno putrido Pini canadensis prope Factory, Pennsylv.
F. sporidochiis induratis, capitato-gyroso-expansis, (ut fere Tremella) ex aurantio rubris, majusculis, subcompresso-stipitatis. Aquae immersa, omnino solvuntur in sporidia majuscula, diaphana, teretia et vermiformia aut flexuosa, apicibus obtusatis.

Genus 228. DERMOSPORIUM.

N.B. D. *flavicans*, mihi notum ex bonis speciminibus europaeis—nondum in America inveni. Sequentes novae species autem congeneres esse persuasus sum.

*3033. 1. D. DECOLORANS, L. v. S., rarius ad caules plantarum maximarum v. c. Umbellat., Bethl.
D. Sporidochio globoso, sparso, parvo, subapplanato, subpellucido, primum pallido, demum ochraceo. Sporidiis minutissimis globosis, non ita densim instratis ut in D. *flavicanti*. Pruinam simulant.
*3034. 2. D. ROSEUM, L. v. S., in ligno carioso passim obvium, Bethl.

D. duplo minus priori et D. flavicanti. Sporidochiis sparsis, turbinatis, roseo-pellucidis. Sporidiis oblongis ut pruina circum circa inspersis.

*3035. 3. D. ATRUM, L. v. S., ligno denudato increscit plagis pedalibus in trunco Hickory (Carya tomentosa aut sulcata) Nazareth, et truncum quasi nigrescit. Omnino hujus generis.

D. Sporidochiis densissime aggregatis, aterrimis, humido tempore autem subfuscescentibus, oblongo-globosis, magnitudine Sphaeriae millegrana, quam refert. Densim undique tecta sunt sporidochia strato sporidiorum concolorum ac vix pellucidorum, sed opacorum.

Genus 229. SPHAEROSPORIUM. L. V. S., Novum Genus.

Sporidochiis obliteratis planiusculis, strato densissimo, pulvinatim elevato incumbente sporidiorum non simplici sed coacervato. Sporidiis majoribus pellucidis, globosis, intus includentibus massam globulosam, grumosam, opacam.

*3036. 1. S. LIGNATILE, L. v. S., in frustulis majoribus pulveris vaporariae, et in corticibus putridis Quercuum, etiam Salicum, Bethl.

S. strato pulvinato sporidiorum ex ochraceo rufo—pulvinatim super sporidochium elevato. Acervis 2—3 linearibus, aggregatis, ovatis, aut longissime confluentibus. Globulus exterior sporidiorum in aqua, omnino pellucidus; interior subopacus. Sicco tempore tota sporidia tum subangulata, ochracea et opaca deveniunt. Acervos Bactridii primo obtutu refert.

Genus 230. EPICOCCUM.

*3037. 1. E. *nigrum*, Lk. p. 107, n. 1 frequens in caulibus, maxima specimina in caule Ricini longe lateque confluentia reperta sunt Bethlehemis.

*3038. 2. E. *purpurascens*, Lk. n. 2, in caulibus Asparagi, Bethl. et perpulchre in culmis Zizaniae, Philadelph.

*3039. 3. E. CARICICOLA, L. v. S., frequens in foliis majorum Caricum, Bethl.

E. macula stromatica vix ulla. Sporidochiis sparsis applanato-globosis, demum pezizoideis, impressis nigrofuscis. Sporidiis creberrimis subglobosis nigrofuscis, demum folium conspurcantibus. Puncriforme sese nudo oculo praebet.

Genus 231. AEGERITA.

3040. 1. A. *candida*, Lk. p. 108, n. 1, Syn. Car. 1274, vulgaris ad cortices udos, etiam, Pennsylv.

3041. 2. A. *caesia*, Syn. Car. 1275, et Bethlehem. Mihi videtur species bona, non rara in lignis siccis. Sporidochiis nempe non globosis, sed ovatulis, multo minoribus, et caesiis.

*3042. 3. A. LUTESCENS, L. v. S., in lignis siccis carie consumptis, Bethl.

A. sporidochiis globoso-applanatis, sparsis, majoribus quam A. candidae, lutescentibus. Basi subcontracta.

*3043. 4. A. OVULA, L. v. S., in lignis cariosissimis frequens, et. Salem et Bethl.

A. major. Sporidochiis ovalibus ex candido pallidis, densim aggregatis, laxissime affixis, longe lateque aggregatis, interdum difformibus. Exacte referunt congeriem ovulorum insectarum. Sporidia non difficiliter diffluentia sub aqua.

Series III. Cephalotrichei et Scoriadei, Fr.

Genus 232. Periconia. Fr. ad sequens Genus.

3044. 1. P. *byssoides*, Lk. p. 109, n. 1, Syn. Car. 1288, frequens in Paeoniae et Malvaecarum caulibus et Pennsylv.

3045. 2. P. *subulata*, Lk. n. 2, Syn. Car. 1289, P. stemonitis rarior et in Pennsylvania.

*3046. 3. P. *nana*, Lk. n. 3. Solummodo obvia mihi in foliis Pini inopis prope Camden Jersey.

*3047. 4. P. epiphylla, L. v. S., in variis foliis dejectis observata, Bethl.

P. sparsa, pluribus tamen approximatis. Sporidochio breviusculo, superne attenuato, nigro. Capitulo pro ratione magno, fusco, globoso. Sporidiis nigris densim inspersis.

*3048. 5. P. gracilis, L. v. S., in putridis capsulis Staphyleae, Bethlehem.

P. sparsim crescens. Sporidochio subulato, gracili, nigro. Sporidiis fuscobrunneis in capitulum globosum collectis caducis. Ceterum ex minutissimis, nudo oculo vix detegendis.

*3049. 6. P. fasciculata, L. v. S., non infrequens in stipitibus caulibusque Salem et Bethl.

P. in maculam epidermide denudatam aggregata. Sporidochiis aterrimis rigescentibus, basi fasiculatim junctis. Capitulis ex aggregatione sporidiorum, nigris subclavatis, compactiusculis sed facillime deciduis.

*3050. 7. P. macularis, L. v. S., rara ad ligna deorbata, Salem et Bethlehem. Huc citanda P. lichenosa, Syn. Car. 1287.

P. Sporidochiis densissime in maculam aggregatis, simplicibus, aterrimis. Sporidiis in capitulum subovale compactum, tenue, deciduum nigrum et subfuscescens collectis, et copiosim sparsis circum circa.

*3051. 8. P. bulbosa, L. v. S., in stipitibus minoribus ac majoribus, Bethl.

P. gregibus vastis, longe lateque aggregata. Sporidochiis simplicibus, longiusculis, nigrocinereis, strictis aut flexuosis, ex bulbo sphaeriaemorpho basilari. Capitulo turbinato, deciduo, subfuscescente.

Genus 233. Cephalotrichum.

*3052. 1. C. *rigescens*, Lk. p. 111, n. 1, passim ad ligna v. c. Rhododendri maximi, Bethlehem.

3053. 2. C. *monilioides*, Lk. n. 2, Syn. Car. Isaria 1304, Bethlehem inveni in ingenti trunco Pini canadensis a fluminis Lehigh inundatione nobis adportato, per plures annos, plagis ingentibus.

Genus 234. Isaria.

3054. 1. I. *crassa*, Lk. p. 112, n. 1, Syn. Car. 1295, frequens in chrysalidibus et Pennsylvania—cum var *truncat.* 1296.

3055. 2. I. Sphingophila, L. v. S., Lk. n. 5, Syn. Car. 1298, in Phalaena, Bethlehem obvia.

3056. 3. I. phalangiophila, L. v. S., Syn. Car. aranearum 1299, solummodo in Carolina mihi obvia.

*3057. 4. I. *arachnophila*, Lk. n. 3, rarissime in aranea, Bethlehem.

3058. 5. I. *agaricina*, Lk. n. 7, Syn. Car. 1297, etiam Bethlehem frequens in Agaricis.

3059. 6. I. *epiphylla*, Lk. n. 8, Syn. Car. 1300. Frequens in foliis dejectis, et. Bethl.

3060. 7. I. *clavata*, Lk. n. 9, in frustro atramenti exsiccati putrido, Bethlehem.

*3061. 8. I. *bulbosa*, Lk. 10. Bethlehem rarissime.

*3062. 9. I. *hydnoides*, Lk. 11. Passim Bethlehem, in truncis. Hydnum calvum, A. et S.

*3063. 10. I. *glaucocephala*, Lk. 12. Bethlehem in ramulis. Optime quadrat cum descriptione Linkii sed nostra multoties major.

3064. 11. I. *umbrina*, Lk. n. 13, Syn. Car. 1301, rarior, et. Bethlehem.

*3065. 12. I. *fasciculata*, Lk. n. 15, in asseribus putridis reperta, Bethlehem.

3066. 13. I. *citrina*, Lk. n. 14, Syn. Car. 1303, nondum in Pennsylvania observata.

*3067. 14. I. FURCATA, L. v. S., rarissime inventa ex chrysalidibus foliis tectis excrescens, Bethlehem.

I. maxima, 2—3 uncias longa. Sporidochio pallido crassiusculo torto, basin versus glabrato, apice in clavulam furcatam candidam diviso, densim tectam sporidiis pulverulentis, floccis interspersis.

*3068. 15. I. NIGRIPES, L. v. S., etiam ex chrysalidibus defossis, Salem reperta.

I. Sporidochio simplici, altitudine semiunciam aequante; stipite quasi tenui tereti nigro glabro ad dimidium usque tum abiente in clavulam simplicem obtusam, cinereo-albam pulverulentam, saepe falcatam. Sporidiis compactiusculis.

*3069. 16. I. *carnea*, Pers. et Consp. Nisk. etiam Syn. Car. 1302, Link. p. 118, in notis. Nostra Bethlehemis passim in stipitibus et foliis dejectis—bona species—quam hoc loco describendam coactus sum ob Linkii observationem.

I. Sporidochiis minutis fasciculatis, e fasciculis divergentibus quasi stipitibus basi connatis, formatis, pallidofuscis, capitulo aut clavula laxissima floccosa. Sporidiis creberrimis eleganter carneo-rubris inter floccos inspersis. Vix semilineam excedit, sed sporidochiorum fasciculis confluentibus, semiunciam occupantibus.

*3070. 17. I. CANDIDA, L. v. S., in ligno putrido passim, Bethl.

I. gregalis, minuta, $\frac{1}{2}$ linearis, erecta, subfasciculata, sed saepius simplex. Sporidochiis rectis albis, clavula fere ad basin extensa, cylindrica, ex aggregatione Sporidiorum majusculorum candidorum, subpedicellatorum, quibus laxim obsita est. Stipite igitur brevi suffulta videtur.

*3071. 18. I. GLOBOSA, L. v. S., locis ericetosis in Rhododendretis ad terram, Bethl.

I. Sporidochio stipitiforme crassiusculo firmo, 1 lin. longo, in capitulum globosum crassum dilatato. Stipite carneoluteo. Capitulo sporidiis densis candidis profuse intersperso. Totus fungus altitudinem 2—3 linearem attinet; sparsim proveniens.

*3072. 19. I. BICOLOR, L. v. S., ad stipites dejectos in terra jacentes, Bethl.

I. caespitosa. Sporidochiis stipitiformibus, basi attenuatis, irregulariter compressis, in capitulum sporidiferum dilatatis, subdivisum in ramos corniculatos rufescentes, ceterum laxum, compressum et difforme. Sporidiis farinosis candidis. Rami difformiter compressi. Fungus 3—4 lin. altus.

Genus 234. ANTHINA. F. S. V. p. 169.

*3073. 1. A. *ceranoides*, Lk. Obs. (Isaria) in stipitibus in terra jacentibus, Bethlehem.

Genus 235. CERATIUM.

*3074. 1. C. *hydnoides*, Lk. p. 118, Syn. Car. 1292, et. Bethl.

3075. 2. C. *pyxidatum*, Lk. n. 2, Syn. Car. 1293, et. Bethl.

3076. 3. C. *porioides*, Lk. 3, Syn. Car. 1294, nondum in Pennsylvania observatum.

Genus 236. SCORIAS. Sys. Veg. Fr. p. 171.

3077. 1. S. SPONGIOSA, L. v. S., Syn. Car. 1311, Botrytis. Non sine numine celeberrimus Friesius hunc fungum maximum, tam abnormem loco citato Systemati suo incorporat. Evidenter est hujus vicinitatis—et multa habet communia cum Podisomate. In Pennsylvania quaque in sylvis fagineis, plerumque in terra jacet,—nec etiam his regionibus a me unquam statu non indurato inventa.

Genus 237. DACRINA. F. S. V. p. 172, Dacrydium, Nees.

3078. 1. D. *cinnabarinum*, Nees. Syst. passim et Bethl. ad ligna occurrit. Syn. Car. 1336. Dematium praesertim sub cortice Juglandis tomentosae, &c.

*3079. 2. D. *hydnoideum*, Consp. Fung. Nisk. A. et S. sub nomine Hydnum sudans. Optime quadrant specimina nostra in ligno Rhododendri, Bethl.

Genus 238. Botryosporium, L. v. S., Novum Genus.

Sporidochio obsoleto. Sporidiis quasi botrytim in binis aut pluribus seriebus ordinatis in sporisoriis pellucidis pyriformibus, suffultis pedicello pellucido septato, atris, compresso-globosis, minutis sporisoriis fasciculatim prorumpentibus.

3080. 1. B. prorumpens, L. v. S., in Euphorbiae epidermide (et magis confluens etiam in Dianthi) ex crusta quadam cinerascente, more Cladosporii prorumpens, Bethlehem.
B. acervis minutis, copiosis, subconfluentibus, aterrimis, ex fasciculatis sporisoriis pedicellatis.

Series IV. Sporodermei.

Genus 239. Sporidesmium.

*3081. 1. S. *atrum*, Lk. p. 120, n. 1, in lignis putridis, Naz.
3082. 2. S. nitens, L. v. S., in truncis et ramis denudatis Spiraeae opulifoliae satis vulgare, Bethl.
S. Stromate applanatim pulvinato, acervis minutis semilinearibus tantum passim confluentibus, lignum longe lateque punctuans Sporidiis densim aggregatis clavatis, fusiformibus et subtortuosis, fusco-atris cum splendore nitente.

Genus 240. Exosporium. Lk. p. 120, parte minore.

E. *Vermiculariis* in Genere No. 58, supra descriptis, huc et non ad Pyrenomicetum pertinere mihi videntur
E. *Tiliae*, No. 1833, hujus libelli:
E. *clavuligera*, No. 1834: adde quoque
3083. 3. E. maximum, L. v. S. Stilbospora maxima Syn. Car. 506, quod autem in Pennsylvania mihi non obvium. Magnitudine sporidiorum, oculo nudo perceptibilium valde insigne.

Genus 241. Seiridium.

*3084. 1. S. *marginatum*, Lk. p 126, n. 1. Planta nostra pervulgata in Rosa corymbosa, incola inundatorum locorum, icone ac descriptione Neesi exacte convenit. Sed abhorret magnitudine. Plerumque nempe occurrit in ramis vivis aut subviventibus acervis ingentibus crassissimis, biuncialibus, ambiens ramos, et saepe multi acervi confluunt. Sporidiis tam magnis ut optime possint observari nudis oculis, aut saltem per lentem quam minime augentem.
*3085. 2. S. Similacis, L. v. S., passim ex caulibus Smilacis caduci et aliorum specierum erumpens, Bethlehem.
S. acervis, longissime confluentibus, tamen multo minoribus, nec tam inerassatis. Sporidiis cylindricis, atrofuscis, obtusis, pedicellis longissimis contortis albis.

Genus 242. Coryneum.

*3086. 1. C. *depressum*, Lk n. 4, in ramulis Rhodo lendri, Bethlehem.
*3087. 2. C. *brachyurum*, Lk. n. 3, passim in lignis ramorum. Bethlehem.
3088. 3. C. Hedysari, L. v. S., Syn. Car. 505, Didymosporium in foliis vigentibus Hedysarorum in Carolina evidenter hujus loci.
3089. 4. C. corticale, L. v. S., Syn. Car. 514, elegantulum, non frequens sed distinctissimum in epidermide Platani occidentalis.

*3090. 5. C. Rhododendri, L. v. S., passim in foliis Rhododendri maximi, Bethl.
C. Sporidochiis minutis, sparsis, per epidermidem folii prorumpentibus, convexulis, atris, intus albescentibus. Sporidiis dispersis, demum nudiusculis. Sporidiis ovalibus aut pyriformibus, pedicellis breviusculis, crassis, septatis.

*3091. 6. C. Smilacis, L. v. S., in epidermide Smilacis rotundifolii dispersum, Bethl.
C. Sporidochiis tectis sub epidermide elevata, tantum poro, aut rima centrali apertis. Disco minuto tum conspicuo, densim obsito sporidiis nigris ac fuligineis pedicellatis, oblongis aut subcylindricis, septatis—demum effluentibus.

3092. 7. C. epiphyllum, L. v. S., vulgare in foliis Castaneis. Sparsim et nigrificans, Bethlehem.
C. sporidochiis obliteratis, acervulis parvis, irregularibus densim aggregatis in pagina aversa. Sporidiis numerosis, ovato-cylindricis, subfalcatis, septatis, fuscis. Aqua infusa apparent pedicelli longiusculi, pellucidi, pluribus versus basin coalitis.

*3093. 8. C. effiguratum, L. v. S., subtectum sub villositate paginae aversae foliorum Quercus macropae, Nazareth.
C. sporidochiis atris difformibus aut stellatim confluentibus, subeffusis, applanatis. Sporidiis pyriformibus, multiseptatis, brevissime pedicellatis. Primo obtutu affine quodammodo Botryosporio nostro.

Genus 213. Gymnosporangium.

*3094. 1. G. *Juniperi*, Lk. p. 127, n. 1. Infrequens sed bene distinctum a Podisomate Juniperi inventum prope Easton Pennsylvaniae in Junipero virginiana.

Genus 214. Podisoma.

*3095. 1. P. *Juniperi*, Link. p. 127, in unico Junip. Sabina mihi nota, in his regionibus—copiosim propullat.

3096. 2. P. macropus, L. v. S., Lk. p. 127, perperam sub Gymnosporangio. In Carolinae superioris regionibus mihi optime notis, rarior fungus. In Pennsylvania vulgatissimus, apprime infestans Juniperos virginianas sub cultro hortulanorum gementes, et vulgo notus nomine "*Cedar apple*," sub quo in forum affertur, ut potens, quanquam fabulosum remedium anthelminticum. Linkius dolet me non in anatomen sporidochii inferioris inquisivisse. Quae nunc de hoc mihi innotuerunt hoc loco lubenter addo. Primum, basis illa vexatissima, nullimodo pro sporidochio habenda, si hoc nomine designare vis idem quod in Podisomate Juniperi sic audit. Est corpusculum *illud*, gelatinosum e stipitibus sporidiorum implicatis formatum exacte cum ligulis tremellosis nostri P. macropodis congruum. Basilare capitulum autem de quo quaeritur omnino alius indolis. Nunquam autem deest. Initium contra semper praebet nostro fungo; primo juventute in tenerrimis ramulis J. virginianae se ostendens, magnitudine capitis aciculae majoris, sensim crescens, plerumque ramulo penetrante immutato et in capitulum plus minusve regulariter turbinatum et plicatum intumescens;—ad uncialem vel immo biuncialem diametrum attingens. Substantia in sicco et obsoleto fibroso-suberosa est, ut Fistulinae, sed non succoso-carnosa, quasi ex fibris ex pedicello late obconico radiantibus—ceterum tum servans habitum sublignosum. Capitulum vigens contra faciliter, ut pomum, secandum immo comedendum est—durum exsiccatione devenit. Extus cortice gaudet epidermidis ad instar, colore ex lilaceo fuscopurpurascente, omnino tamen exsucco ut pomorum epidermide. In tota superficie regularia apparent foveola, polygona, plerumque pentagona, primum tantum applanata, mox impressa et umbonata; tum cortice in centro, rupto, tempore madido, protruduntur sporidochia ligulosa tremellosa, colore pulcherrimo aurantio uncialia—totas arbores per unam vernalem noctem pluviosam tanquam ditissima messe Aurantiorum maturorum exornans. Si tempus madidum continuatur per multos dies, per tantos hoc statu invenitur, ligulis tandem diffluentibus. Mox sub sole autem exsiccantur ligulae—nec unquam revivificantur. Capitulum persistit per annum. Vetusta specimina, interne non dissimilia excrescentiis arborum. Nullibi capitulum tamen sine ligulis saltem initialibus, ligulae sine capitulo invenientur. Solenne est, ubi arbores juniperinas cultri ope in formam pyramidatam aut aliam coercuntur, fungum nostrum incredibili copia eas contegere—sed secus

dum observationes meas per decem annos cautim notatas, tales arbores non destruit, ne quidem videtur illis nocere. Sunt igitur ex populo multi, et non pauci non ex plebe, qui persuasissimi haerent fungum hunc aut inflorescentiam aut fructum verum Juniperorum esse. Basin nihil habere commune cum opere insectifero per assiduum studium edoctus sum. Non valde fungosam esse etiam fatendum est. Mihi videtur abnormissima formatio de qua melius nil adseverare—sed ulterius examinare.

Nota.—Anatomia baseos hujus fungi in statu juveniB, antequam ligulam tremellosam protrudit, casu omissa loco suo, indicat sequentia. Substantia baseos tum intus omnino est similis substantiae Pomi maturi—si basin cultro secare velis—ex albido-virens, sese monstrat, omnino ut pomum immaturum; grumoso-cellulosum, habitu quodam ex stipite radiante. Mox color viridis mutatur in fulvo-aurantium colorem—et tum observantur fibri albidi rariores radiantes ramosim ex stipite. Ligulis semel protrusis, quod fit tempore pluvioso basis non amplius crescit; si autem ver non pluviosus sit, indies augentur bases. Epidermis juniorum ante evolutionem sporidochiorum, texturam quandam filamentoso-furfuraceam habet, et crassitiem epidermidis pomi. Ligulae in statu perfectissimo onustae sunt sporidiis, omnino ut in P. juniperi—sunt autem ligulae plerumque longiores nec conicae sed saepe subflexuosae et potius versus apicem attenuatae.

Genus 245. Sarcopodium.

3097. 1. S. *circinatum*, Lk. p. 127, n. 1, non rarum sed faciliter ob similitudinem cum initio Thelephorae (et Fries. in Elencho p. 226 ad Thelephoras trahit) super visum. Ad caules, Bethl.

Genus 246. Lichenopsis. L. v. S., Novum Genus.

Genus omnino aberrans. Angiogastres, praesertim Sphaerobolas cum ultimis Gymnomycetibus, ut Podisoma, apte jungens, et ob crustaceam maculam in ligno—ad Lichenes quoque certo modo spectans.

Sporidochio, in cupula subglobosa ime recondita in ligno lichenosim circum circa albocrustato, quasi immerso; tapetio cupulae subcarnoso excavato, et cupula primum operculo albopulveraceo tecta, demum operculo deciduo, ore rotundo contracto magnitudine capitis aciculae majoris, aperta. In centro hujus cupulae globosae assurgit Sporidochium cylindricum apice truncatum, lutescens, ex coalitis floccis hyalinis tenuissimis compositum, diffluentibus in aqua, in siccis conjunctis in corpusculum induratum subcorneum; flocci, qui evidenter sunt pedicelli, ut in Podisomate, sporidiorum, quibus hoc corpusculum coronatum est in disco suo; sporidia autem ovalia multiseptata, aterrima. Sicco statu sporidochium ad instar columellae in centro cupulae assurgit, luteum, ex nigris sporidiis in superficie punctato-nigrum. Verisimiliter, ut mihi videtur, sporidochium demum ejicitur, ut globus sphaeroboli. Non vidi hoc factum, sed cupulae saepe inanes occurrunt. Operculum plerumque umbonatum.

*3098. 1. L. sphaeroboloidea, L. v. S., satis frequens occurrit Bethlehemis in ramis Corni floridae, Celtis, et aliorum in ligno et cortice.

L. Cupulis immersis ligno (Stictidem majorem revocantibus) lineari diametro, intus tapetio pallide luteo subcarnoso vestitis extus albescentibus, per crustam albescentem subdeterminatim effusam prorumpentibus. Maculas lichenosas biunciales efficit.

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GENERUM ET SPECIERUM A ME PRIMUM IN AMERICA DETECTARUM.

** Signo notatae jam in Synopsi Fungorum Carolinae descriptae sunt.*

Acladium densissimum.
Acremonium nigrospermum.
Actidium caricinum.
Actinothyrium caulincola.
magnoliae.
Aecidium (Caeoma) apocynatum.
aroidatum.
asteratum.
cimicifugatum.
claytoniatum.
clematitatum.
convolvulatum.
dracontionatum.
erigeronatum.
euphorbiae hypericifoliae.
gnaphalitatum.
hepaticatum.
helianthatum.
hibiscatum.
houstoniatum.
hieraciatum.
hypericatum.
impatientatum.
luminatum.
myricatum.
osmundatum.
pedatatum.
pentstemoniatum.
podophyllatum.
pyratum.
pyrolatum.
sambuciatum.
sagittatum.
smilacinatum.
tenue.
trachelifoliatum.
uvulariatum.
Aegerita lutescens.
ovula.
Aethalium ferrincola.
Agaricus denticulatus.
farinosus.
illudens.
indigo.
lamellosus.
nigripes.
pectinatus.
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siccus.
tenuipes.
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Arcyria globosa.
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Aspergillus purpureofuscus.
Asterophora effusa.
Atractobolus lutescens.

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Boletus alboater.
betula.
pocono.
Botrytis laxa.
lateritia.
leucoxantha.
lilacina.
minutula.
pellicula.
pulcherrima.
Bovista candida.
craniiformis.
Botryosporium prorumpens.
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andropogi.
anemonis.
ari virginici.
azaleae.
brunneum.
chaerophyllis.
chelidonii.
elephantopodis.
helianthi.
heucherae.
hyperici.
ipomaeae.
iridis.
junci.
lobeliae.
smilacis.
solidaginis.
spermacocis.
syntherismae.
terebinthinaceae.
teucrii.
thalictri.
zeae.
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pilipes.
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cupressi.
fascicularis.

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incarnatus.
odoratus.
olivaceus.
roseus.
spathulariae.
viridis.
Capillaria malvacearum.
rhizomorphina.
Cenangium aeruginosum.
andromedae.
apertum.
castaneae.
cephalanthi.
clavatum.
compressum.
confusum.
crustaceum.
enteroxanthum.
episphaeria.
fatiscens.
fibriseda.
molluscum.
nigrofuscum.
palmatum.
populinum.
pyrinum.
rhois.
rosae.
sphaeriomorphum.
staphyleae.
triangulare.
tumorum.
turgidum.
viburni.
Ceratites (Caeom.) botryapites.
fraxinites.
Ceratosporium fuscescens.
Chaetomium Douglassi.
typhinum.
Chloridium candidissimum.
Circinotrichum candidum.
Cladosporium bignoniae.
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maculans.
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sparsum.
typhae.
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Clavaria compressa.
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merismatoides.
subcorticale.
sulphurascens.
tenax.
tenuis.
tetragona.
trichomorpha.
vernalis.
Coccotrichum erubescens.
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concentricum.
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flavovirens.
fragariastrum.
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Coryneum corticale.
effiguratum.
epiphyllum.
hedysari.
rhododendri.
smilacis.
Craterium floriforme.
porphyrium.
Cribraria minutissima.
Cryptosporium pseudoacaciae.
Cyphella pendula.
Cytispora ceanothi.
difformis.
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robiniae.
rubi.

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cinnabarinus.
difformis.
epiphyllus.
involutus.
pellucidus.
viticola.
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gramineum.
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merulioides.
subtomentosa.
zonata.
Dematium cinnamomeum.
Dematium episphaeria.
ramosum.
smilacis.
Depazea (Sph.) catalpicola.
dryophila.
kalmicola.
smilacicola.
tulipiferae.
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Dermosporium atrum.
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effusum.
crumpens.
minutissimum.
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chalybea.
chenopodii.
cinerascens.
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elliptica.
encoelium.
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filicum.
fothergillae.
frigoris.

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lauri borboniae.
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liriodendri.
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nodicola.
orbiculata.
ornans.
panici.
penicillata.
petiolaris.
phlogis.
phytolaccae.
polygalae.
polygonati.
pomigena.
radicalis.
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quisquiliarum.
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epidermidis.
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virgultorum.
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byssinum.
canum.
cinnabarinum.
coriaceo-membranaceum.
croceum.
delicatum.
epiphyllum.
himantia.
luteopallidum.
molle.
olivaceum.
ramosum.
rhois.
subresupinatum.
sulphureum.
viticola.
Hymenella ciliata.
Hypodermium effusum.
Hysterium abbreviatum.
andromedae.
azaleae.
betulignum.
castaneae.
cinerascens.
confluens.
expallens.
fibritectum.
flexuosum.
griseum.
insidens.
kalmiae.
librincola.
mori.
nucicola.
osmundae.
plantarum.
polygonati.
praelongum.
pteridis.
rhododendri.
rimincola.
rufescens.

Hysterium rugulosum.
smilacis.
syringae.
teres.
tortile.
vaccinii.
verbasci.
vulvatum.

Illosporium caesium.
Institale maximum.
Irpex cinerascens..
epiphylla.
fuscescens.
niveus.
ochraceus.
tulipiferae.
Isaria bicolor.
candida.
carnea.
furcata.
globosa.
nigripes.
phalangiophila.
sphingophila.

Labrella nitida.
Lachnobolus cinereus.
Leangium stipatum.
Lematis olivaceovirens.
quercina.
rufo-olivacea.
Lentinus Lecontii.
pelliculosus.
strigosus.
Schweinitzii.
Leotia chlorocephala.
Leptostroma acerinum.
acteae.
aspidiorum.
cereale.
donacis.
fructigena.
hyperici.
inundatum.
marginatum.
piceum.
Leptostroma rhuinum.
scandentium.
zizaniae.
Licea epiphylla.
macrospora.
nitens.
Lichenopsis sphaeroboloidea.

Lophium naviculare.
sassafras.

Melanconium dothidea.
griseum.
peritheciatum.
sassafras.
truncatum.
viscosum.
Merulius brassicaefolius.
pallens.
strigosozonatus.
Mitremyces lutescens.
Mitrula inflata.
exigua.
Monilia fusconigra.
globosa.
punctuans.
Morchella foraminulosa.
Mucor capitato-ramosum.
echinophila.

Naematelia nucleata.
Nidularia fascicularis.
juglandis.
melanosperma.
pulvinata.
rugisperma.
stercorea.

Oidium candidum.
inquinans.
Ostracodermum spadiceum.
Ostropa cinerascens.
hysterioides.
rugulosa.
sphaerioides.

Pachyma cocos.
Patellaria nigrocinnabarina.
rhododendri.
verbasci.
Perichaena marginata.
vaporaria.
Periconia bulbosa.
epiphylla.
fasciculata.
gracilis.
macularis.
Peridermium (Caeom.) germinale
Perisporium caladii.
Peziza arachnoidea.
ascoboloidea.
atrofusca.

Peziza candidofulva.
chlora.
chlorascens.
cinnamomea-lutescens.
cinnabarina.
cinereofusca.
citrinella.
clypeata.
comata.
conchella.
concrescens.
confluens.
crocea.
daedalea.
discincola.
erinacea.
eupatorii.
floccosa.
fulvocana.
fuscobarbata.
glandicola.
griseopulveracea.
hydrangeae.
incarnescens.
irregularis.
leguminum.
lentaginis.
leontina.
luteo-alba.
maculincola.
megaloma.
membranacea.
mitrula.
mollisiaeoides.
obtecta.
occidentalis.
ochracea.
opulifolia.
pastinacae.
penicillata.
philadelphi.
prolificans.
pruinata.
rosco-alba.
rufiberbis.
rufula.
solitaria.
sphaerincola.
subhirta.
subiculata.
torta.
turbinulata.
vitis.
vixvisibilis.

Phacidium capsulare.
caulincola.
corticalis.
exasperans.
fraxineum.
glandicola.
platani.
quercinum.
rhododendri.
Phlebia cinnabarina.
coccineo-fulva.
hyanoidea.
Phlebomorpha arbuscula.
Phoma andromedae.
calycanthi.
culmicola.
prunicola.
tulipiferae.
Phragmidium hedysari.
Phyllopta parasitica.
Physarum atrum.
caespitosum.
elegans.
effusum.
luteovalve.
polyaedron.
vermiculatum.
Podisoma macropus.
Podosporium rigidum.
glandicola.
Polyactis grisea.
Polyporus aesculi.
candidissimus.
caryae.
cervinum.
cinereus.
conchifer.
connatus.
decipiens.
decolorans.
favescens.
fimbriporus.
gilvus.
graveolens.
hirsutulus.
internus.
isabellinus.
juglandinus.
labyrinthiacus.
lilacinus.
lobatus.
nigromarginatus.
nigropurpureus.
nigropurpurascens.
Polyporus parvulus.
pallido-cervinus.
papyraceus.
pilotae.
pini canadensis.
pulchellus.
radicatus.
rhododendri.
sassafras.
scutellatus.
spissus.
superficialis.
symphytum.
tenuis.
unicolor.
undulatus.
virgineus.
viticola.
xantholoma.
Porotheleum pezizoides.
Pterula plumosa.
Puccinia aculeata.
andropogi.
ari triphylli.
arundinariae.
asteris.
bullata.
concentrica.
emaculata.
galii.
helenii.
helianthi.
heliopsidis.
junci.
kalmiae.
lespedezae procumbentis.
lespedezae violaceae.
myrrhis.
phaseoli trilobi.
potentillae.
pycnanthemi.
sŏphii.
smilacis.
solida.
sorghi.
verbesinae.
vernoniae.
windsoriae.
xanthii.
zizaniae.
Pyremum collae.

Radulum hydnans.
investiens.
Radulum pini canadensis.
Rhizoctonia baltatus.
himantia.
placenta.
radiciformis.
Rhytisma aceris eriocarpae.
adglutinatum.
asteris.
bifrons.
cacti.
confluens.
decolorans.
elevatum.
ilicincola.
ilicis canadensis.
juglandina.
magnoliae.
prini.
sasafras.
seriale.
silphii.
smilacis.
solidaginis.
vaccinii.
vitis.

Saccidium bignoniae.
vegetum.
Sarca brassicola.
Schizoxylon tuberculatum.
Scleroderma lycoperdoides.
Sclerotium aesculi.
anemones.
applanatum.
convexulum.
difforme.
erumpens.
frustulatum.
fuscomaculatum.
gallarum.
gregarium.
hysteriiforme.
lauricola.
lignatile.
liliorum.
meduflare.
nicandrae.
orobanches.
petiolorum.
platani.
prunorum.
reniforme.
sassafras.
Scolicotrichum candidum.

Scorias spongiosa.
Sciridium smilacis.
Septoria nigricans.
Sparassis spathulata.
Sphaeria abbreviata.
aculeata.
aculeus.
aequilinearis.
afflata.
aggregata.
albocrustata.
albofarcta.
agrostidis.
albomaculans.
albopruinosa.
ambigua.
amorphostoma.
amorphula.
ampelos.
ampliata.
andromedae.
andromedicola.
andropogi.
andropogicola.
angelicae lucidae.
annulans.
aperta.
apertiuscula.
aristidae.
artemisiae.
asclepiaidis.
assecla.
atropunctata.
azaleae.
badia.
bignoniae
boleticola.
brassicola.
brunnea.
cacti.
caespitulans.
callostroma.
canaliculata.
candida.
cannabis.
capsularum.
caries.
caryophaga.
castaneae.
catalpae.
ceanothi.
celastri.
cephalanthi.
cinerascens.
Sphaeria cimicifuga.
cladosporiosa.
clavulata.
coccineomaculata.
collapsa.
collecta.
colliculosa.
Collinsii.
Comptoniae.
concolor.
concomitans.
concrescens.
confertula.
confusa.
conseptata.
conspersa.
conspurcata.
consors.
contorta.
convexula.
coptis.
corni.
corticium.
crataegi.
cornudamae.
cuticulata.
daphnidis.
daturae.
decorticata.
deformata.
dematiosa.
denudans.
denigrata.
diderma.
diffusa.
diospyri.
discincola.
discreta.
distincta.
divergens.
druparum.
drupivora.
durissima.
echinophila.
effigurata.
elevans.
elliptica.
elongato-compressa.
emergens.
enterolenca.
enteroxantha.
erumpens.
euphorbicula.
evulsa.
Sphaeria exarata.
excavata.
excipulans.
excussa.
expers.
fibriseda.
flabella.
flabelliformis.
fragariae.
fraxicola.
frustrum coni.
fumosa.
fuscata.
fuscescens.
fuscopurpurea.
gallae.
geoglossum.
gregalis.
glandicola.
gleditsiae.
goniostoma.
gossypii.
grisea.
gyrosa.
Halseyana.
herbicola.
herculea.
hibisci.
hibiscicola.
hyalina.
hydnicola.
hydrangeae.
hyperici.
hysterioides.
jasmini.
illita.
imposita.
incanescens.
inclinata.
inconstans.
indistincta.
insidens.
inspissa.
intermedia.
inundatorum.
investiens.
investita.
involuta.
iridis.
iridicola.
juglandicola.
junipericola.
kalmiarum.
kalmicola.

Sphaeria lactescentium.
lactifluorum.
lactucorum.
laevigata.
lecythea.
lespedezae.
ligustri.
lilacina.
limaeformis.
lineolans.
liquidambaris.
liriodendri.
luteomaculata.
magnoliae.
malvicola.
marginata.
mela.
meliae.
meloplaca.
mezerei.
millegrana.
modesta.
mollissima.
monstrosa.
morbosa.
mori albae.
mori rubrae
mucronata.
naviculare.
nervisequia.
nidulans.
nigrella.
nigrita.
nigrobrunnea.
notha.
obscura.
obtecta.
obtusa.
obtusata.
ochroleuca.
oligostoma.
olivaceohirta.
olivascens.
orbicula.
palliata.
pannosa.
panici.
papilla.
papyrifera.
parasitans.
parsimmons.
pastinacae.
penicillata.
peponis.

Sphaeria perforata.
pericarpii.
perigynicola.
petiolorum.
phellos.
plantaginicola.
platani.
platypus.
platystoma.
pocula.
pomorum.
polygonati.
polygoni sagittati.
potentillae.
pruina.
pubens.
pugillus.
punctum.
purpureofusca.
putaminum.
pyramidale.
quadrata.
quadrifida.
quercuum.
radicalis.
radicum.
rattus.
recondita.
rhois.
rhuina.
rhizina.
rivulosa.
ribesia.
rimincola.
robiniae.
rosae.
rubicunda.
rubincola.
ruborum.
rufescens.
sacculus.
samarae.
sambucivora.
sarraceniae.
sassafras.
scabriseta.
scapincola.
scirporum.
scoparia
sclerotim.
setosa.
siliquosorum.
silphii.
smilacis.

Sphaeria smilacicola.
solidaginis.
sphaerincola.
sphaeriostoma.
sphaerocephala.
spina.
spissa.
squamulata.
staphyleae.
stercorum.
sterilior.
stilbosporans.
stipata.
subaffixa.
subbullans.
subconcava.
subconfluens.
subconnata.
subfasciculata.
subiculata.
sublobata.
subrugosa.
subsimplex.
sulcigena.
sulphurea.
sumachi.
tageticola.
tecta.
tenella.
tenuissima.
tenerrima.
thapsi.
tigrinans.
tingens.
tondenda.
toxici.
transversa.
transversalis.
truncatula.
tuberculosa.
tubericola.
tulipifera.
tumorum.
turbinulata.
typhae.
ulmea.
umbellatarum.
vaccinicola.
Van Vleckii.
variabilis.
variolaria.
variolosa.
verbascicola.
vernicosa.

Sphaeria verrucosa.
viburni.
virescens.
viridiatra.
viticola.
vitis.
xanthostroma.
yuccae.
zeae.
zinniae.
Sphaerobolus corii.
crustaceus.
minutissimus.
sparsus.
Sphaeronema catalpae.
caulincola.
rhododendri.
Sphaerosporum lignatile.
Spermodermium rufum.
Spilocaea concentrica.
Sporidesmium nitens.
Sporotrichum aeruginosum.
alutaceum.
cohaerens.
gratum.
himantia.
incarnatum.
intertextum.
lutescens.
solubile.
subvinosum.
viticola.
Spumaria licheniformis.
Stachytidium fulvum.
lutescens.
roseum.
Stemonites crypta.
digitata.
maxima.
Stictis caulincola.
ceracea.
fimbriata.
hydrangeae.
hyssopi.
ligustri.
philadelphi.
prominula.
rubi.
stella.
Stictis umbellatarum.
Stilbospora multiseptata.
quadriseptata.
staphyleae.
Stilbum inquinans.
roseum.

Thelephora albidobrunnea.
albidocarnea.
albobadia.
caespitulans.
candida.
candidissima.
cantharella.
cladonia.
cinerascens.
coccinea.
episphaeria.
fimbriata.
grisea.
helvelloidea.
imbricatula.
insinuans.
lilacina.
lutosa.
multipartita.
ochraceoflava.
pallescens.
pallida.
pedicellata.
regularis.
rubropallens.
sistotremoides.
spongiosa.
styraciflua.
subzonata.
vialis.
viticola.
Torula crustacea.
cucurbitarum.
medullare.
olivascens.
Tremella aurantia.
corrugata.
crassiloba.
palmata.
virens.
Trichia angulata.
difformis.
Trichia miniata.
punctulata.
Trichoderma rubropallens.
Tubercularia calycanthi.
celastri.
difformis.
fatiscens.
pezizoidea.
radicalis.
subpedicellata.
Tympanis cinerascens.
fasciculata.
fraxini.
plicatocrenata.
seriata.
turbinata.
viticola.
Typhula mucerdae.
ramealis.

Vermicularia acuminata.
albomaculata.
angustata.
arctii.
balsamitae.
denudata.
effusa.
epiphylla.
filicina.
gerardiae.
involucri.
ipomaeorum.
liliaceorum.
ovata.
petiolorum.
polygonati.
polygoni virginici.
punctuans.
scandentium.
silphii.
staphyleae.
subeffiguratum.
thecicola.
truncata.
Verpa caroliniana.
Vibrissea truncorum.
Volutella quercina.

Zythia compressa.

Fig. 1. Podosporium rigidum, L. v. S.

a. Ramulus cum Podosporio magnitudine naturali.
b. Flocci plures, sporidiis onustis, modice auctis.
c. Floccus singulus; valde auctus, gerens sporidia
d. Idem, sporidiis jam dejectis.
e. Sporidia maxime aucta.
f. Idem.

Fig. 2. Botryosporium prorumpens, L. v. S.

a. Fragmentum caulis, acervulis fungi prorumpentibus ex epidermide, magnitudine naturali.
b. Sporodochium onustum fasciculis sporisoriorum, valde auct.
c. Sporisoria pellucida continentia sporidia.

Fig. 3. Ceratosporium fuscescens, L. v. S.

a. Corticis frustrum, cui injacent sporidia effusa mag. nat.
b. Modice aucta sporidia in epidermidis frustro.
c. Sporidia subpellucida septata magis aucta.
d. Sporidia valde aucta.
e. Sporidium simplex auctissimum.

Fig. 4. Clasterisporium caricinum, L. v. S.

a. Folii Caricis fragmentum in quo effusum Clasterisporium magnitudine naturali
b. Modice auctum.
c. Sporidia pedicellata maxime aucta.

Fig. 5. Sphaerosporium lignatile, L. v. S.

a. Frustrum ligni, acervis fungi onustum, mag. naturali.
b. Modice auctum.
c. Acervulus sporidiorum pellucidorum, cum globulo interno grumoso maxime auctorum.
d. Sporidium singulum pellucidum madefactum.
e. Sporidium siccum.

Fig. 6. Lichenopsis sphaeroboloidea, L. v. S.

a. Ligni frustrum cum fungo naturali magnitudine.
b. Fungus super corticem elevatus—modice auctus.
c. Idem operculo tectus.
d. Sectio perpendicularis cupulum et sporodochium cylindricum internum monstrans.
e. Cupulæ sectio—maxime aucta.
f. Cupulam manem cortice cinctam in ligno nidulantem monstrans.
g. Sporodochium segregatum maxime auctum.
h. Sectio fungi junioris, cupulam, sporodochium et operculum monstrans.
i. Floccorum fasciculus, sporidiis nigris coronatorum.
k. Magis aucti Flocci.
l. Sporidium auctissimum.
m. Operculum.

PLATE XIX

ARTICLE IX.

Descriptions of the Specimens of Inferior Maxillary Bones of Mastodons in the Cabinet of the American Philosophical Society, with Remarks on the genus Tetracaulodon (Godman), &c. By Isaac Hays, M.D. Read May 20, 1831.

MY friend, the late Dr Godman, communicated to the Society about eighteen months since, an account of an extinct fossil animal, closely resembling the *Mastodon* in most of its characters, but differing from it, in possessing tusks in the *lower* jaw. This difference Dr Godman thought of sufficient importance to constitute a new genus, to which he gave the name of *Tetracaulodon*.*

The immediate subject of Dr Godman's description having been a young animal,† a distinguished naturalist‡ of New York suggested the opinion that the *Tetracaulodon* was nothing but the young of the gigantic *Mastodon*, and that the tusks were merely milk teeth, which were lost as the animal became adult.§ The same opinion has since been confidently advanced by others.‖

Had Dr Godman been able to examine the specimens in our cabinets with his own eyes, instead of being obliged to rely upon those of others, his own memoir would doubtless have contained all the proofs necessary for refuting the opinion that he had committed the error of

* See Vol. III. N. S., p. 478.

† Dr Godman states, however, that there are two adult jaw bones of the same animal in the cabinet of the University of Virginia. Vol. III. N. S., p. 484.

‡ William Cooper, Esq.

§ See Silliman's Journal, Vol. XIX. p. 159, 160, October 1330

‖ See Ferussac's Bulletin for August 1830, &c.

describing, as a new animal, the young of a known species. The account of the *Tetracaulodon* was, however, written by the author, literally on his death bed.* There is no need of the Society's being reminded of the generous and lofty ambition, by which Dr Godman was always actuated, or that he was compelled through life, to struggle against difficulties, which no ordinary man could have overcome; and they will at once understand his expression to his friends, on announcing that he was preparing an account of a new fossil animal,—"I have all my life," said he, "been compelled to labour for bread, I shall now do something for my fame."

These remarks will account for such imperfections as may have occurred in Dr Godman's memoir, as also explain my anxiety to secure to him the credit which appears to me to be his due.

It is not my purpose to inquire into the value of the tusk, in the lower jaw, as constituting a generic distinction between the *Mastodon* and *Tetracaulodon*.† Generic divisions in science are, for the most part, as yet too arbitrary—the characters upon which they are founded too ill determined—and our materials at present too scanty, to induce us to venture any remarks upon this subject, even had we not determined to restrict ourselves to a detail of facts.

A more important subject of inquiry, is whether the *Tetracaulodon* is merely the young of the gigantic *Mastodon*, and the tusks in its lower jaw only milk teeth, which are lost when the animal becomes adult and are never replaced. Fortunately the cabinet of the Society furnishes us with materials for at once settling this question. It contains portions of three lower jaws, which I have the honour of exhibiting, and which will be particularly described hereafter. The first is that of a young Mastodon, *M. giganteum* (Plate XX.), entirely destitute of tusks or alveoli for tusks; the two others appertain to *aged adult* animals (Plates XXVIII. and XXIX.), and exhibit distinct sockets for tusks. A more complete refutation then of the assertion that the *Tetra-*

* Dr Godman died before the number containing his memoir was published.

† Mr Titian R. Peale, who was the first naturalist by whom the *Tetracaulodon* was seen, suggested to Dr Godman that the tusks in the lower jaw might be merely a sexual character. It is impossible, in the existing state of our knowledge, and with our present materials, either to confirm or positively refute this suggestion.

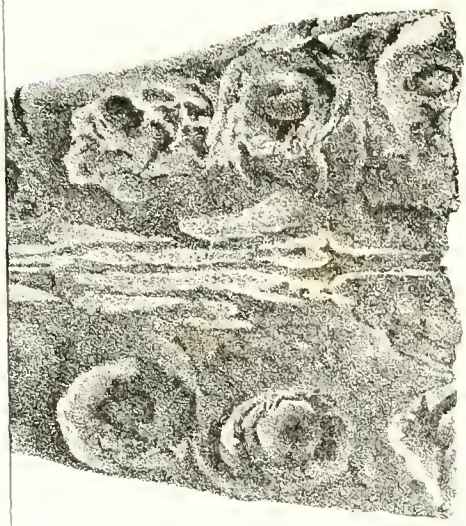

Fig. 6.

Fig. 1.

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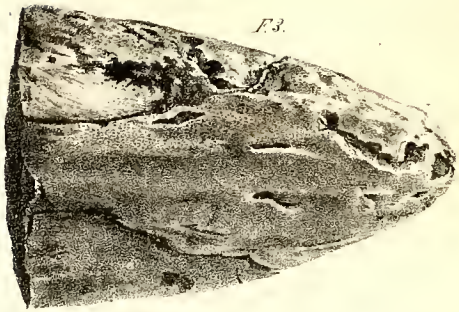
* Dr Godman died before the number containing his memoir was published.

† Mr Titian R. Peale, who was the first naturalist by whom the *Tetracaulodon* was seen, suggested to Dr Godman that the tusks in the lower jaw might be merely a sexual character. It is impossible, in the existing state of our knowledge, and with our present materials, either to confirm or positively refute this suggestion.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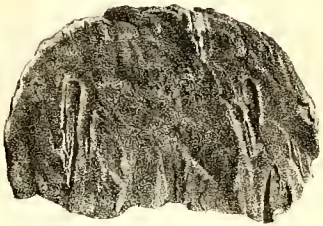
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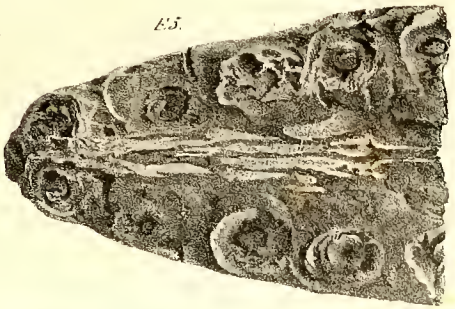
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caulodon is only the young gigantic *Mastodon*, is hardly possible, and the merit of having contributed to the Fauna of this country, one of its largest antediluvian animals, is confirmed to Dr Godman.

The object which originally prompted this communication, being thus accomplished, I might here close it; but from the great number of specimens which I have been so fortunate as to have had opportunities of examining (about forty lower jaws, and upwards of two hundred teeth), some facts have been presented, to which my friends attach so much interest, as to induce me to lay an account of them before the Society.

The first specimen I shall describe is a fragment of the left side of the lower jaw, consisting of the ramus, chin and portion of the coronoid process. (Plate XX., fig. 1 and 2.) This fragment is sixteen inches long, and weighs nine pounds. The teeth, as well as the loose texture of the bone, show it to have belonged to a young animal. The condyloid process and angle of the jaw are deficient, and the chin is slightly broken, so that it is impossible to determine whether it had the foliated termination so conspicuous in the adult. (Plate XXIII., *s*.) The coronoid process rises nearly perpendicularly as in the *giganteum;* but the ramus of the jaw is rather more cylindrical than in the adult of that species.

This fragment contains two teeth. The posterior one (Plate XX., *d*) had just commenced to pierce the gum; its crown is perfect, but its roots are not yet formed. This tooth is four inches and one-tenth* long, and two inches and seven-tenths broad. It has three wedge-shaped denticules, each of which is divided, by a longitudinal groove, into two processes, the inner of which is somewhat the wider; and each of these processes is superficially divided into two or more points —the exterior points being the largest.

The anterior tooth (Plate XX., *c*) resembles that just described in its general characters; its crown is, however, somewhat worn, particularly its anterior points. Its length is three inches and three-tenths, its breadth is two inches and five-tenths.

* All the measures were taken with callipers.

Anterior to this tooth are three alveolar depressions (Plate XX., *m*, *n*, *o*) which mark the place of teeth which have been lost.

Beneath the anterior socket is a foramen for the passage of blood-vessels and nerve. (Plate XX., fig. *r*.) At the anterior portion of the chin are two foramina for the same purpose: that on the left side is lower and larger than the other, pyramidal, and at a short distance bifureates. A *fine* needle may be passed some distance into each of these divisions.

In one of the lower jaws of an adolescent *Mastodon* in the Finnel collection at New York, the foramen in the chin is two lines in diameter and passes directly into the large foramen in the ramus of the jaw occupied by the maxillary nerve and blood-vessels.

The next specimen to be noticed, is a fragment of the right side of the inferior maxillary bone of an adolescent gigantic *Mastodon*, (Plate XXI.) belonging to the splendid Wistar Museum of the University of Pennsylvania. This fragment is two feet five inches long. The general form of this jaw is similar to that of the gigantic *Mastodon* represented in Plate XXIII., but the ramus is rather more cylindrical, in which respect it resembles the specimen just described (Plate XX.). The upper portion of the coronoid, and the condyloid processes are deficient, as also the angle. The chin is also broken, but there are manifest indications of an expansion similar to that represented in Plate XXIII., *s*. Just above the base of the ramus internally are a number of circular depressions, probably formed by the lobules of the inferior maxillary gland.

This fragment contains two teeth, and anterior to these a portion of the alveolus of a third tooth. The anterior tooth (Plate XXI. *e*) has three denticules, with two points each: it is five inches and eight-tenths long, and three inches and seven-tenths broad. The posterior tooth (Plate XXI. *f*) has five denticules or pairs of points, and a trifid heel. This tooth is eight inches and one-tenth long, and four inches and three-tenths broad.

The cabinet of the Society does not contain any specimen of the lower jaw presenting all the characters of the *Mastodon giganteum*, except a small fragment represented in Plate XXII. This fragment is twelve

Fig. 2

Fig. 1.

Mastodon young

Colman Am Philos Soc

Fig 2

Fig 4

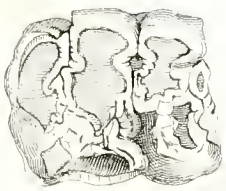
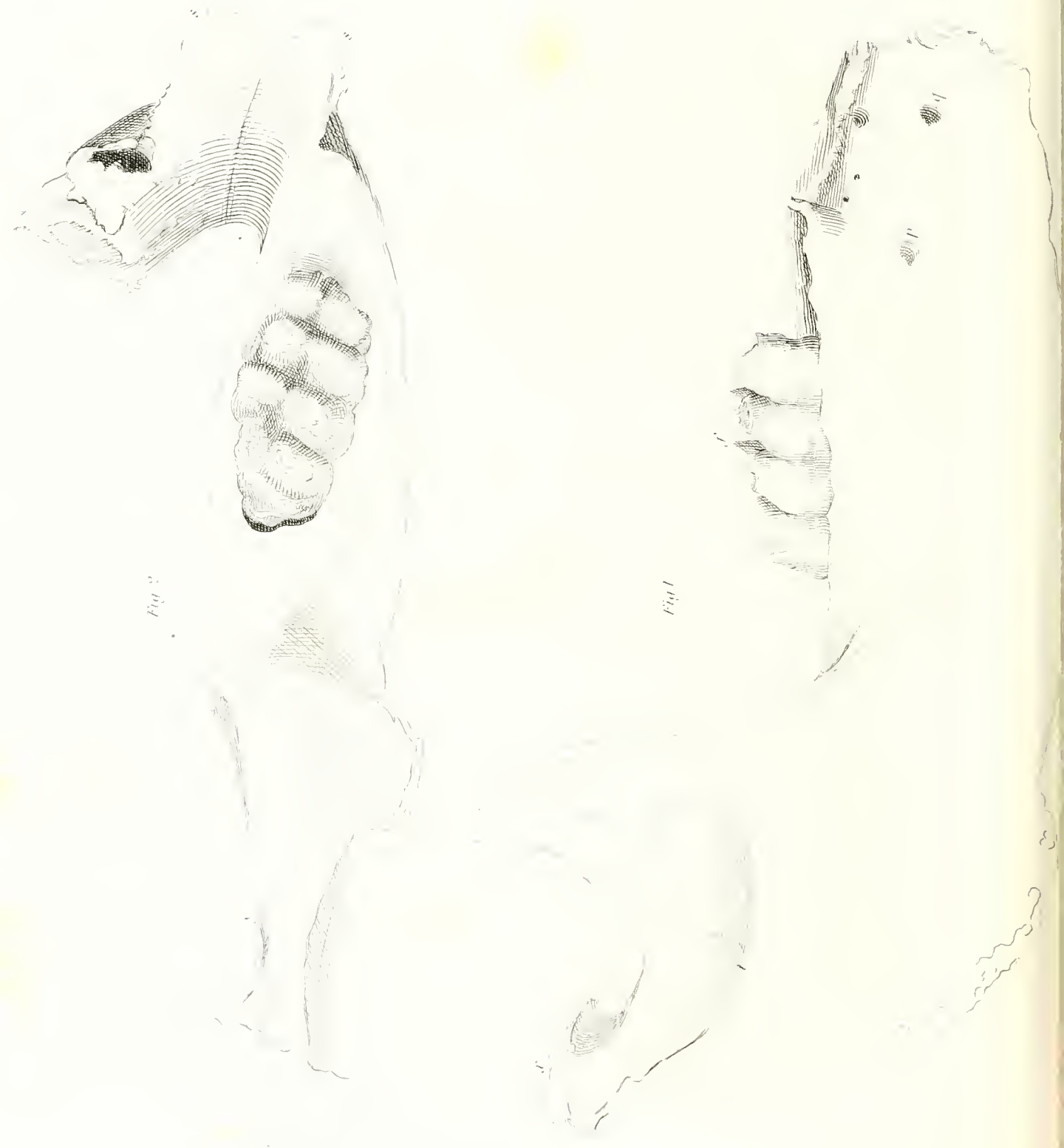


Fig 3

Fig 1.

Mastodon *adult*

Cabinet Am Philos Soc



Mastodon giganteum *adult*

Baltimore Museum

inches long, and consists of a portion of the ramus of the jaw, with the base of the coronoid process. It contains one tooth, the posterior molar. This tooth has five denticules with two points each, and a heel; it is six inches and nine-tenths long, and three inches and eight-tenths broad.

I have the pleasure, however, of exhibiting to the society, one of the most perfect specimens of the lower jaw of this species, that has as yet been obtained. (Plate XXIII.) This jaw belongs to the Baltimore Museum. It is the one dug up by the late Mr Peale on the farm of Peter Millspaw, twenty miles west of the Hudson, which is described by Mr Rembrandt Peale in his "Narrative of the discovery and exhumation of the skeleton of the Mastodon,"* and drawings and a description of which were communicated by Mr Peale to Baron Cuvier, and from which the latter drew many of his characters of this interesting animal. When found this jaw was perfect; but about two years since it was unfortunately broken by accident. The largest fragment, consisting of the whole right side of the jaw, the coronoid and condyloid processes, the chin and nearly two inches of the left side, all in a remarkably fine state of preservation, are represented in Plate XXIII.

The length of this jaw is two feet six inches and a half, the height of the coronoid process above a line drawn along the base of the jaw fourteen inches and a half.

The articulating surface of the condyloid process is divided by a superficial groove (x) at about two-thirds of the distance from its inner edge. The direction of the condyle is inwards and rather forwards.

The coronoid process rises nearly perpendicularly; the upper part curves somewhat outwards; it is one inch and a half higher than the condyloid process.

Just below the condyle a ridge (t) commences, which, after passing downwards and a little forwards a short distance, becomes nearly horizontal, and above this is a considerable depression, an inch in depth at its deepest part.

That portion of the jaw which is covered by the masseter muscle, is much flattened and rough; the angle is also very rough.

* Copied in Godman's American Natural History, Vol. II. p. 211.

The ramus of the jaw is slightly flattened on its external aspect, and somewhat excavated on its internal one. The anterior maxillary foramina are two (Plate XXIII., fig. 1, *p*, *q*); there are several smaller foramina near the chin for the passage of the blood vessels and nerves.

The chin terminates in a remarkable expansion, the edges of which are exceedingly rough. (Plate XXIII. *s*.) There are no alveoli for tusks, nor any trace of there ever having been any.

This jaw contained but one tooth in each side. The sockets for the molars anterior to these are completely filled up. The tooth which remains (the last molar) was somewhat injured by the accident to which we have already referred, but it appears to have had ten points and a heel. The direction of this tooth in the jaw is outward anteriorly, as is seen from fig. 2.

The foramen for the inferior maxillary nerve and blood vessels is just below the condyle internally (fig. 2, *y*), and is one inch and a quarter in diameter.

On the upper surface of the ramus, just at the base of the coronoid process, is the commencement of a small groove, which immediately divides and diverges. It is evidently caused by a blood vessel; and we mention it because a similar groove occurs in the fragment represented in Plate XXII. It is not to be found in any other specimen in the collection.*

The lower jaw represented in Plate XXIV. differs considerably in its form from the jaws of the *M. giganteum* we have described. Its base is more curved antero-posteriorly—the external aspect of its ramus is more flattened, and that portion of the jaw covered by the masseter muscle less so. The groove for the tongue is deeper and narrower; and the chin appears pointed, but the specimen being partly worn it is impossible to determine the exact form of this part.

* There is in the Cabinet of the Lyceum of Natural History of New York, a fragment of an inferior maxillary bone, which agrees in all its characters with that just described, except that the direction of its condyle is inwards and backwards, and that its posterior molar has but four denticules. This bone was found in New Jersey, and is figured in Mitchell's edition of Cuvier's Theory of the earth; and copied into Cuvier's *Ossemens Fossiles; Grand Mastodonte*, Plate III. fig. 5.

Fig 2

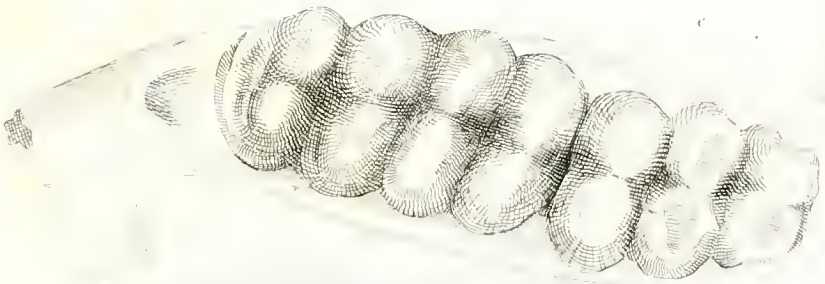
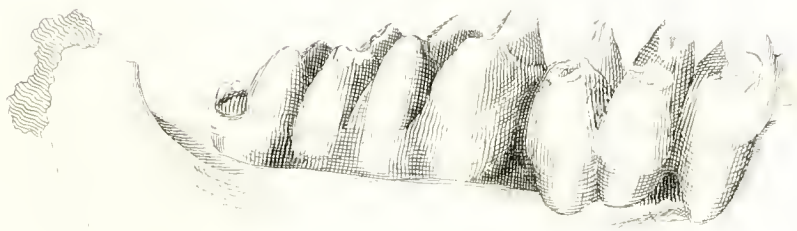


Fig 1



Mastodon

Cabinet Du Palais

Fig. 2

Fig. 1

Mastodon *Jeffersonii*

Cabinet Am Philos Soc

The posterior molar (Plate XXIV. *f*) has but eight points, and the heel is broad, whilst in our specimens of the *M. giganteum* the posterior molar has ten points and a mammillaform heel. The direction of the teeth is also very divergent anteriorly. Are these differences sufficient to indicate its belonging to a different species from the *M. giganteum?*

There is, in the cabinet of the Society, a portion of another jaw, consisting of the left ramus, containing two teeth, and the chin; which is entirely similar to the above in its characters, but somewhat distorted, no doubt from injury when the animal was young. There is another specimen resembling the above in its general characters, among the lower jaw bones of Mastodons belonging to J. P. Wetherill, Esq. and which are deposited in the valuable cabinet of the Academy of Natural Sciences of this city. This fragment, however, has had the teeth broken out.*

The cabinet of our Society contains a portion of an inferior maxillary bone, (Plate XXV.) which differs in its form from any of those hitherto described. This fragment consists of the chin, the right ramus, with the posterior molares, and a portion of the left ramus. The anterior molar (Plate XXV. *e*) has three denticules with two points each; the posterior (fig. *f*) has four denticules, with two points each; and a ridge posteriorly. The ramus of this jaw is straighter, and more cylindrical; the height from the base to the edge of the alveole is less; the groove for the tongue broader and shallower; and the direction of the teeth less diverging than in the maxilla figured in Plate XXIV. The crowns of the teeth are also less elevated in the former than in the latter.

In the collection deposited by Mr Wetherill in the Cabinet of the Academy of Natural Sciences, there is a fragment of a lower jaw, which exhibits the same characters as the one just described. This fragment consists of the chin, about eight inches of the left and twelve inches of the right ramus. The alveolar processes are much broken, and the teeth are lost.

* This jaw was exhibited to the Society.

The inferior maxillary bone described by Dr Godman* is very accurately represented in Plate XXVI., fig. 1 and 2. The chin, the right ramus and a portion of the *coronoid* process, and about three-fourths of the left ramus are perfect. The mental ridge, each side of the labial groove, is sharp and smooth, without that remarkable foliated expansion so conspicuous in the *M. giganteum* (Plate XXIII. *s*). In the left ramus there is still the first deciduous tooth (Plate XXVI. fig. 2, *a*); on the right side the corresponding tooth has fallen out, and its socket is partly obliterated. This tooth (fig. 2) is one inch and five-tenths long, and one inch and one-twentieth broad; its surface is considerably worn, most so anteriorly. It had four points; anteriorly there is a fold of enamel which, commencing at the external edge of the base of the crown and passing upwards and inwards, terminates in a point; posteriorly there is a somewhat similar and rather broader fold of enamel. Anteriorly the crown is rounded; posteriorly it is flattened from contact with its successor; its grinding surface is considerably worn. It has two roots, one anterior, the other posterior.

We have seen in the cabinet of William Cooper, Esq. of New York, a fragment of a lower jaw containing one of these teeth exceedingly perfect; its points are scarcely perceptibly worn. Another specimen is in the cabinet of the Academy of Natural Sciences.†

The second tooth (Plate XXVI. *c*) is one inch and eight-tenths long, and one inch and eleven-twentieths broad. This tooth, like the preceding, had two denticules, with two points each. On the anterior of the crown there is a flat fold of enamel similar to that on the first tooth. This tooth has also a heel which rises highest towards its inner aspect, forming a small fifth point. The grinding surface of this tooth is considerably worn. This tooth like the preceding one has two roots; one anterior, the other posterior.

In the Finnel collection there is one of these teeth; it is one inch and seven-tenths long, and one inch and five-tenths wide.

* Vol. III. p. 478.

† This tooth is described in the "Fauna Americana," as appertaining to a new species of Tapir to which the name *T. Mastodontoideus* is given. Mr William Cooper was we believe the first to detect this error; we have carefully examined the tooth, and there can be no doubt of its being the first milk tooth of the animal we are describing.

Fig 3

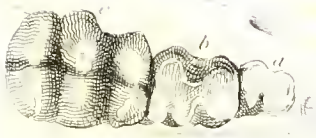


Fig 2

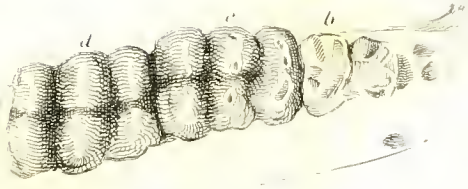


Fig 1

Tetracaulodon — young

Peales Museum New York

Fig 2

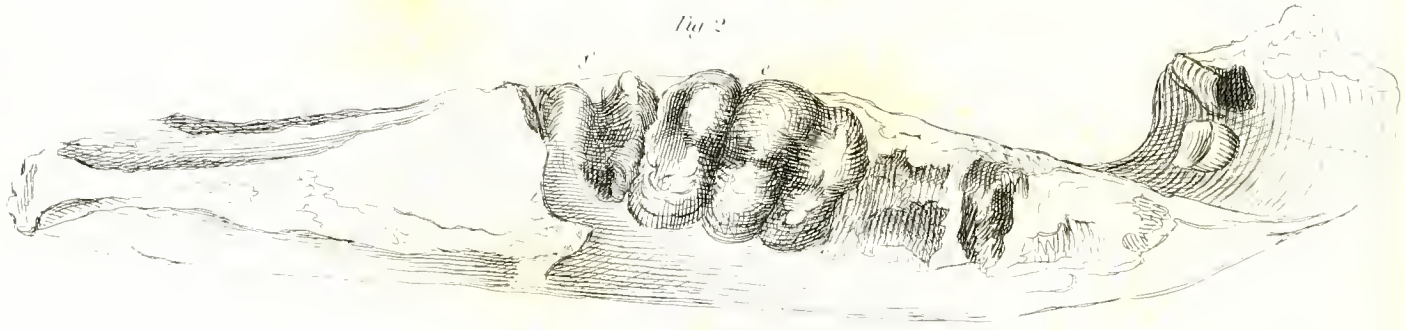
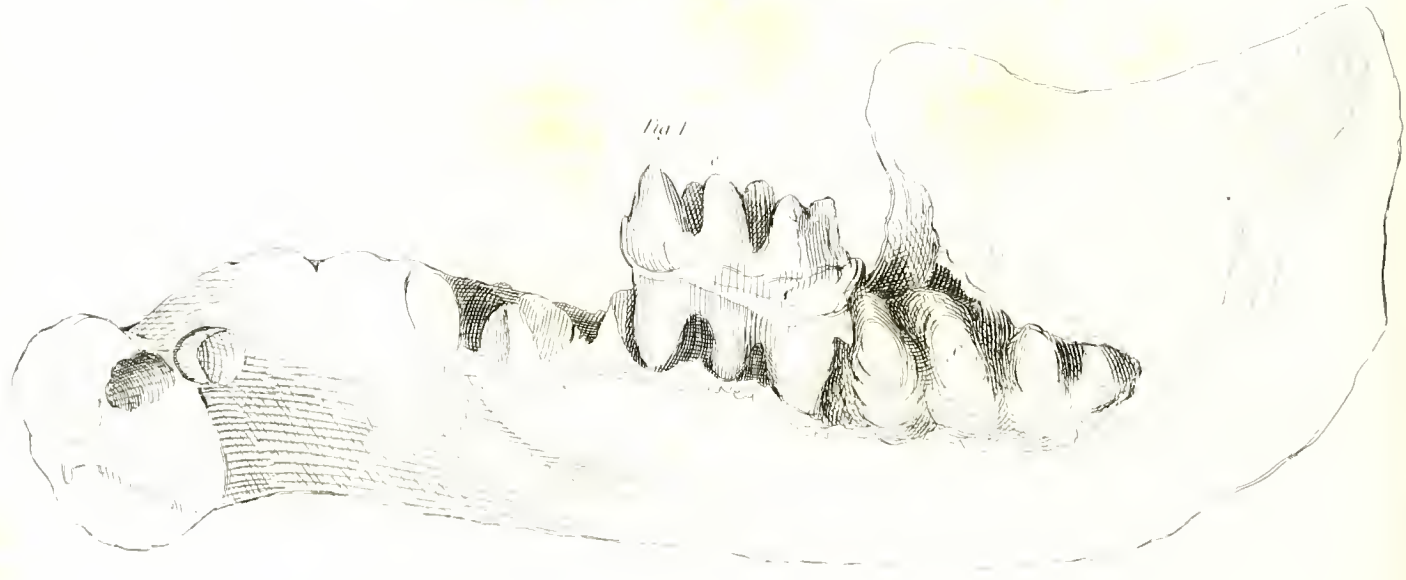


Fig 1



Tetracaulodon *Adolescent*

Cabinet Universitaire Pa

The third tooth (Plate XXVI. *c*) is three inches and one-tenth long, and two inches and two-tenths broad. This tooth has three denticules, with two points each. On the anterior surface of the crown, it has a fold of enamel rising up in a small point; and along the base of the crown posteriorly there is an horizontal ridge, consisting of a number of very small mammillaform processes. This tooth has three roots corresponding to its denticules.

The fourth tooth (*d*) is three inches and seven-tenths long, and two inches and eight-tenths broad: it has three denticules, each of which is divided by a deep groove into two rather flattened points, of which the inner is the broader; each of these is again superficially divided by a slight groove. At the base of the crown, both anteriorly and posteriorly, there is a ridge of very small mammillaform points. Each denticule has on its external point, both on its anterior and posterior surface, a ridge of enamel, which commences at the base of the process near the central groove and passes upwards and outwards. This ridge appears to exist on all the teeth until it is worn down by use, and we find traces of it also in the teeth of the *M. giganteum*. The crowns of all the teeth rise on their inner surface nearly perpendicularly, but on the outer side they slope obliquely inwards.

The tusk belonging to this jaw is so accurately described by Dr Godman, and so correctly represented in the plate to his paper, that there is no necessity for my doing more than to refer to it. (See Vol. III. N. S., Plate XVIII. fig. 2.)

The tusk represented in Plate XXVI. fig. 3, is that of an adult animal. It is eleven inches long, and its largest diameter is two inches, its section is oval. This tusk consists of a central column composed of thin plates nearly parallel to its base; the whole covered with a coat of enamel, which becomes very thick towards its projecting extremity. The enamel is entirely worn off to the termination of this tusk, and even the central bony column is evidently worn down and smooth, as if from use by the animal; it is also worn at one side. This tusk belongs to the collection of J. P. Wetherill, Esq.*

* There is in the cabinet of the Academy of Natural Sciences, deposited by Mr J. Fisher, by whom it was obtained at Big-bone lick, a tusk much smaller than the one we have described—it is also much less perfect.

The next specimen we shall describe is the right side of an inferior maxillary bone, in a remarkably perfect state of preservation, belonging to the cabinet of the Society. (Plate XXVIII.)

The condyloid process in this jaw is considerably higher than in the *M. giganteum* (Plate XXIII.). The direction of the condyle also differs, being inwards and *backwards.*

The coronoid process appears to have risen nearly perpendicularly, but its anterior edge and termination are broken. The semilunar notch was evidently deeper in this than in the *M. giganteum*, though its exact form cannot be determined in its present injured condition.

The posterior angle is much rounder than in the *M. giganteum.* The outer surface, where the temporal muscle was inserted, is very rough, being over a considerable space quite tuberculated; and there is a distinct semi-circular ridge of these rough elevations, as will be seen on reference to the drawing. (Plate XXVIII. fig. 1, t, t′, t″.) Immediately anterior to this semicircular ridge, there is an excavation, distinctly striated with muscular impressions (*a*). The ramus is remarkably cylindrical, and its base much more curved than that of the *M. giganteum* (Plate XXIII.). The anterior mental foramen (*q*) is smaller, and nearer to the upper edge of the jaw, than in the other specimens, and the posterior mental foramen is larger than in any of the specimens hitherto described, its largest diameter being nearly nine-tenths of an inch.

The ridge at the side of the labial groove is broken, but it appears to have been expanded; whether or not, as in the *M. giganteum*, and with irregular terminations, it is of course impossible to divine.

This specimen contains but a single tooth. This tooth is six inches long, and three inches and four-tenths broad. It has four denticules with two points each. The enamel on the posterior face of the crown is broken off, and the characters of the heel cannot consequently be determined. The grinding surface of the crown is somewhat worn, and presents the same arrangement of enamel as in the *M. giganteum.*

In the chin there is a small part of the alveole of the tusk remaining. The direction of this alveole is outwards and considerably downwards. It has been found impossible to give a good view of this alveole in the plate, but its position is marked by the dotted lines representing a tusk.

Fig. 2

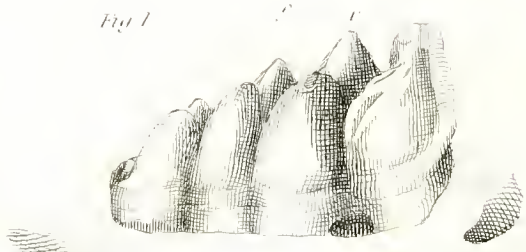
Fig. 1

Tetracanthodon *bellianus*

Cabinet Am. Phila. Soc.

Fig. 2

Fig. 1



Tetracaulodon *Godman*

Cabinet Am. Philos. Soc.

In the cabinet of the Society there is another fragment of a lower jaw, but of the left side, in all respects similar to the preceding, though much less perfect. The upper parts of both the condyloid and coronoid processes are deficient, but the anterior edge of the latter is more perfect than in the preceding specimen, and rises nearly perpendicularly from the ramus. The chin in this specimen is entirely deficient, as is also the whole of the inner table of the ramus, so that the maxillary canal is laid entirely open. This bone must have belonged to an animal nearly of the same age as the preceding, or perhaps somewhat younger; the last molar, as is seen from the alveole, for the tooth is wanting, not having advanced by upwards of an inch as far forward as that in the former jaw.

Whether or not the specimen described by Dr Godman, and the jaws last noticed belong to the same species, cannot be determined positively without further specimens. The jaw next to be described, however, exhibits differences, which would justify the suspicion that it is specifically different from either.

This specimen is represented in Plate XXIX. It consists of a portion of the right ramus of the lower jaw, twenty-two inches and a half long. It contains a single tooth, the posterior molar. The exterior aspect of this jaw, at its angle, is entirely smooth, without any of the rugosities presented in the two preceding specimens. Between the posterior molar and the coronoid process there is a large smooth excavation, *x*. The ramus of this jaw is much less cylindrical than that of the species figured in Plate XXVIII., it is much flattened on its exterior aspect, and its base is almost straight. The posterior mental foramen is exceedingly large, upwards of one inch and a quarter in diameter. The posterior molar is seven inches and two-tenths long, and four inches and one-tenth wide; it has eight points and a broad heel consisting of a row of small mammilla, four of which on the inside are very distinct. This tooth differs in various particulars from the posterior molar belonging to the specimen figured in Plate XXVIII. It is one inch and a half longer, and seven-tenths of an inch wider, the denticules are higher, and the inner points much higher above the exterior ones. Thus in the former, the second denticule (Plate XXVIII. *v*) rises one inch and eight-tenths from its root, and the inner one two inches and two-tenths; whilst in the latter (Plate XXIX. *v*) the corresponding

exterior point rises two inches and three-tenths from the root and the inner one three inches and three-tenths, making a difference in the former of half an inch, and in the latter of one inch and one-tenth.

The chin in this specimen contains about one half of the alveole for the exserted tusk (fig. 2, *z*). This alveole is rather more than two inches in diameter; its direction is outwards and downwards, less downwards however than in the preceding species; indeed there is a distinct difference in the position of these sockets in the two specimens. The base of the socket is smooth and flat, and its position somewhat oblique, so that it is rather deeper towards the exterior, than towards the interior; it is perforated by two small foramina for the nutrient arteries, and the nerves of the tusk.

It is to be lamented that little positive can be ascertained, as to the localities in which the bones belonging to the Society, and which we have just described, were found, their position in the soil, &c. All that can be collected is, the probability, that they are from the Big-bone lick, and that they are those presented by our late president Thomas Jefferson, Esq., and which are noticed in the communication of Professor Wistar, in Vol. I. N. S., p. 376, of the Transactions.

Dentition of the Mastodon.

The specimens we have just described furnish some interesting information relative to the dentition of the *Mastodon*, which we shall now proceed to lay before the Society. The form, and differences, succession and number of the teeth are all subjects of great interest; and in describing them we shall follow Cuvier, adding such additional information as our investigations have brought to light.

The crown of the teeth more or less approaches the rectangular form, slightly inclined however to rhomboidal, and rather narrower anteriorly than posteriorly. It consists of two substances, the interior osseous, the exterior enamel. The crown is divided by deep furrows into a number of ridges or denticules, and these denticules are subdivided by one or more superficial and narrow processes or tubercles. The outer face of the crown rises nearly perpendicularly, the inner face rises obliquely inwards. In the lower jaw, the outer point is higher than the

inner; in the upper jaw it is the reverse. As the teeth are used, their points become worn down, and the enamel presents a lozenge form, with bone in the centre. The roots of the teeth are formed after the crown. With the remains of the animal described by Dr Godman, there were found a number of points, evidently parts of very young teeth, of which the bodies by which they were to have been connected together had not yet been formed. These points are now in the Museum of Mr Rubens Peale, New York.

The number of the roots may be said to correspond to the number of the denticules. In the teeth with two denticules, the two roots are distinct; in those with more than two denticules, the anterior and sometimes the second root are distinct, the others are united but marked by distinct grooves. The roots are flattened anteriorly and posteriorly: externally they are slightly and internally deeply grooved.

The upper teeth may be distinguished from those of the lower jaw by their roots being more divergent laterally, and by their crowns being broader.

The teeth *differ* from one another principally in their size and in the number of their denticules.

In the species of *Mastodon* which inhabited this country there are three kinds of teeth.

The first nearly square and having two denticules;

The second rectangular with three denticules;

The third longer, generally contracted posteriorly, and having four or five denticules and a heel, of various forms.

The first mentioned teeth are always anterior, next follow those with three denticules, and lastly those with four and five denticules; but we have never seen those with five distinct denticules in the upper jaw, they appear to belong exclusively to the lower.

In the young jaw described by Dr Godman, we find, 1st, a small square tooth, with two denticules; 2d, one rectangular with two denticules; 3d, a tooth with three denticules; 4th, one rather larger, also with three denticules. In the upper jaw there are corresponding teeth. Each of the two adult lower jaws having tusks (Plates XXVIII. and XXIX.) contains a tooth with eight points; and it is manifest that there was a corresponding tooth in the upper jaw. The whole number of teeth possessed by the animal described by Dr Godman (*Tetracaulodon*) is then at least twenty; and we think that it is at least probable

that the animal possessed an intermediate tooth between the second tooth with three denticules (Plate XXVI. *d*), and that with four denticules (Plate XXIX. *f*), for we cannot believe the former tooth corresponds with that represented in Plate XXVII. *e*. Should we be correct in our views, this animal possessed three teeth, with three denticules in each side of each jaw, making the whole number of teeth twenty-four; but to render this certain would require specimens of intermediate ages to those hitherto described.

Cuvier attributes to the *gigantic Mastodon* but sixteen teeth, eight in each jaw; of these teeth he saw the three posterior only of each side; but he indicates the fourth from an alveole in the young specimen presented to the French Museum by Mr Jefferson, and he asks, whether this tooth had two or three denticules. In the young specimen belonging to the cabinet of our Society, there are two teeth with three denticules each; and anteriorly an alveole with three depressions, Plate XX. fig. 2, *m*, *n*, *o*. Was there in this alveole a tooth with three denticules, or were there two teeth with two denticules each, of which the anterior tooth having sometime previously fallen out the alveole for its anterior root has been obliterated? We are inclined to believe that the latter was the fact. It may also be asked whether the tooth represented in Plate XX. fig. 1, *d*, corresponds with that in Plate XXI. *e*, in Plate XXIV. *e*, and in Plate XXV. *e*? We think not. Cuvier, it is true, considers the tooth with three denticules, in the adult jaw represented in Plate III. fig. 1, *Grande Mastodonte*,* to correspond with the posterior tooth with three denticules in the young jaw represented in the same plate, fig. 3 and 4; but the difference in the size of these two teeth, and even in their shape, the former being proportionably broader, is very striking. In all the jaws we have examined, this character is constant; thus, compare the tooth represented in Plate XX. *d*, with that in Plate XXI. *e*, Plate XXIV. *e*, and Plate XXV. *e*. It would therefore seem that the Mastodon has three teeth with three denticules; but to render this certain will require further specimens.

The *succession* of the teeth in the *Mastodon*, takes place as follows:—In all the jaws the anterior teeth will be observed to be most worn. As the anterior teeth are worn down others are formed posterior; the anterior teeth successively fall out, their alveoles are obliterated, and

* Recherches sur les Ossemens Fossiles, Tom. I. Paris, 1831.

their successors advance forwards. The number of teeth which are in use in the young animal represented in Plate XXVI. at the same time seems to have been twelve, but probably at a more advanced age was usually not more than eight; and in old age only four. The fact of the jaws represented in Plates XXVIII. and XXIX. having belonged to adult animals is thus conclusively established, all the teeth having been lost, except the posterior molar in each jaw, and that has advanced considerably forward and is much worn.

We subjoin the admeasurements of various teeth, appertaining to the lower jaw of the animals under notice.

Tooth.	Dimensions of Crown in inches.		SPECIMEN.
	Length.	Breadth.	
1.	1.5	1.1	Peale's Museum, New York, Pl. XXVI.
	1.4	1	Academy of Natural Sciences—described in Fauna Americana as the *Tapir Mastodontoideus*.
2.	1.8	1.55	Peale's Museum, New York, Pl. XXVI.
	1.7	1.5	Finnel Collection, New York.
3.	3.1	2.2	Peale's Museum, New York, Pl. XXVI.
	2.9	1.9	Cabinet of Mr Lea.
	3.3	2.5	Cabinet of American Philosophical Society, Pl. XX.
	3.2	2.5	French Museum,* figured by Cuvier.
4.	3.7	2.8	Peale's Museum, New York, Pl. XXVI.
	4.1	2.7	Cabinet of American Philosophical Society, Pl. XX.
	3.8	2.6	French Museum,* figured by Cuvier.
5.	4.6	3.5	Cabinet of American Philosophical Society, Pl. XXIV.
	4.5	3.3	Cabinet of American Philosophical Society, Pl. XXV.
	5.8	3.7	Wistar Museum, Pl. XXI.
	4.4	3.4	French Museum, figured by Cuvier.
	4.3	3.2	Philadelphia Museum.
	4.9	3.6	Virginia University, Pl. XXVII.
6.	8.1	4.3	Wistar Museum, Pl. XXI.
	6.9	3.8	Cabinet of American Philosophical Society.
	7.1	3.7	Baltimore Museum, Pl. XXIII.
	7.2	4.1	Cabinet of American Philosophical Society, Pl. XXIX.
	6	3.4	Cabinet of American Philosophical Society, Pl. XXVIII.
	7	3.8	Cabinet of American Philosophical Society, Pl. XXIV.
	6.5	3.6	Cabinet of American Philosophical Society, Pl. XXV.
	7	3.5	French Museum, figured by Cuvier.
	7.1	3.7	Philadelphia Museum.

* Same jaw.

Before concluding it may be interesting to offer a few general remarks on the animals, which are the subject of this communication. with a brief notice of the species hitherto described.

For a long time the large animal whose remains are found in this country, was considered as the same with the Mammoth of Siberia. which is a true Elephant. It has been shown however by Baron Cuvier that they are generically different, the teeth of the latter consisting of layers of enamel penetrating the whole extent of the tooth, with bony matter interposed between them; whilst in the former the enamel forms only a covering to the bony substance, and does not penetrate it. From the crowns of the teeth, in the species of this genus first known to Cuvier, consisting of mammillaform processes, he named the genus *Mastodon*, from μαστος mammilla, and οδους dens.

Of this genus nine species are admitted by naturalists. Of these, six are indicated by Cuvier, viz.

Species 1. *M. giganteum*, the well known gigantic *Mastodon* of this country.

Species 2. *M. angustidens;* remains of which are found at Simorre in the south of France, in Germany, Tuscany, Switzerland and South America. Cuvier indicates the following characters as distinguishing it from the *M. giganteum*. "Le principal et le plus général est que les cônes de leur couronne sont sillonnées plus ou moins profondément, et tantôt terminés par plusieurs pointes, et tantôt accompagnés d'autres cônes plus petits sur leur côtés ou dans leurs intervalles: d'où il résulte que la mastication produit d'abord sur cette couronne plusieurs petits cercles, et ensuite des trèfles ou figures à trois lobes, mais jamais de losanges." Recherches sur les Ossemens Fossiles. Tom. I. p. 254. These differences will be at once perceived on comparing the partially worn tooth of the *M. giganteum*, Plate XXI., and Plate XXIV. *c*, with the teeth of the *M. angustidens* represented in Cuvier's Ossemens Fossiles, Divers Mastodontes, Plate I. fig. 4, and Plate III. fig. 2 and 4.

Species 3. *M. Cordillerarum*. This species is founded on a tooth discovered near the volcano of Imbaburra, in the kingdom of Quito. and two teeth from the province of Chiquitos, near St Crux de la Sierra. The tubercles of these teeth are divided like those of the *angus-*

tidens, whilst their proportions are the same as those of the *giganteum* with three denticules, but they are distinguished by the figure (*trèfle*) formed by the enamel in the partially worn tooth, being different from the lozenge in the *M. giganteum*. See Cuvier's Ossemens Fossiles, Divers Mastodontes, Pl. II. fig. 1.

Species 4. *M. Humboldtii.* This species is founded on a tooth obtained by M. Humboldt at Conception du Chili. This tooth is nearly square, and smaller than the preceding. See Cuvier's Ossemens Fossiles. Divers Mastodontes, Pl. II. fig. 5.

Species 5. *M. parvus*, founded on a tooth discovered in Europe, and which M. Cuvier thinks too small to be referred to any of the preceding species. It is represented in the Ossemens Fossiles, Divers Mastodontes. Pl. II. fig. 11.

Species 6. *M. Tapyroides.* This is founded on a tooth obtained at Montabusard, near Orleans. Its crown, simply indented, is not so exactly divided into two points, as those of the preceding species, which has led Cuvier to suspect that it may belong to a different species. It is figured in the Ossemens Fossiles, Divers Mastodontes, Pl. III. fig. 6.

Species 7. *M. Arvernensis.* This species was founded by M.M. Croizet and Jobert, Sen., upon a fragment of an upper jaw, a humerus, &c. found in the department of the Puy de Dôme, in France.* A portion of the left side of the upper jaw and some separate teeth have since been found at Eppelsheim, not far from Alzei, in the grand duchy of Hessen, and are now in the museum at Darmstadt.†

Species 8. *M. latidens.* This species and the following are described by Mr Clift, in the second volume of the Transactions of the Geological Society of London, second series. They are founded upon some remains collected by Mr Crawford along the course of the river Irawadi, between Rangoon and Ava, in Asia. The teeth in the *M. latidens* consist of "seven denticules, which are elevated, rounded, and mammillated, the mammillæ being from three to four in number." See Plate XXXVIII., Trans. Geolog. Soc. Lond. Vol. 2, New Series.

* Recherches sur les Ossemens Fossiles du Departement du Puy de Dome; par l'Abbé Croizet et Jobert, ainé. Paris, 4to, avec un atlas des Planches.

† Ueber *Mastodon arvernensis* bei Eppelsheim. Von Herm. v. Meyer, M. d. A. d. N. (Bei der Akademie eingegangen den 24 Juli, 1829.) Acta Acad. Caes. Leop. Carol. Nat. Cur. Vol. XV. Part II.

Species 9. *M. elephantoides.* Distinguished by the teeth being smaller, the denticules more compressed and closer together, and the enamel thinner than in the preceding species. The denticules form a series of plates, mucronate with small points. There is no apparent commissure, nor any central depression, on the contrary, the plates rise in the middle. The teeth have ten denticules, with from five to eight mammillæ. See Geological Transactions of London, Vol. II. Second Series, Pl. XXXVIII.

Mr Meyer, in his account of the remains of the *Mastodon Arvernensis*, found at Eppelsheim, alludes to another species, the *M. turicensis*, as occurring in the brown coal of the molass formation of Switzerland; but by whom this species has been described, or what are its characters, we have been unable to discover.

In the third volume of the *Memorie della Reale Accademia delle Scienze di Torino*, professor Borson has described a tooth, found at Villanova d'Astica, in Piedmont, and which he ascribes to the *giganteum*. After a careful examination of the description and drawing, in the work referred to, and of a cast of the tooth, in the Cabinet of the Academy of Natural Sciences of this city, we feel persuaded that it does not appertain to that species, the denticules having no longitudinal commissure. It probably belongs to a new species, and we would suggest the propriety of dedicating it to professor Borson, under the name of *M. Borsoni.*

If the differences presented by the specimens we have described, be considered as sufficient to indicate a difference in species, or should future researches confirm my suspicions on this subject, four new species will be added to our Fauna; and we would dedicate the first to Baron Cuvier, (*M. Cuvieri*, Pl. XXIV.) to whom science is under such immense obligations; the second to Mr Jefferson, (*M. Jeffersoni*, Pl. XXV.) to whom the Society is indebted for the valuable specimens of this animal in their cabinet; the third to our vice-president, Mr Z. Collins, (*T. Collinsii*, Pl. XXVIII.) one of the most zealous naturalists of whom this country can boast; and the fourth to our lamented Godman (*T. Godmani*, Pl. XXIX.).

In the Finnel collection there are several jaws, differing in many respects from any we have described. There are the portions of two inferior maxillary bones belonging to the left side, flattened superiorly, and their rami exceedingly thick. They contain one tooth each, with

five denticules, the tooth situated towards the inner side of the thick ramus. There is also in the same collection, a fragment of the anterior portion of a lower jaw, with the chin rostrated somewhat, like that of the *Tetracaulodon*, but more expanded, and without alveoli. It conveyed the idea to some of the naturalists who had examined it, of its being the adolescent state of the animal described by Dr Godman, the tusks having fallen out, and their alveoli being just obliterated. We cannot, however, consider such a view as the correct one: the fact shown by our specimens, that the tusks exist in all ages of the animal, is a sufficient disproval of it.

I must not close this communication without expressing the obligations I am under to various gentlemen, for the liberality with which they have facilitated my investigations, and even placed at my disposal such specimens as I wished to collect together for the purpose of minute comparison.

To the liberality of the trustees of the Baltimore Museum, I am indebted for the use of the splendid jaw of the *M. giganteum*, belonging to that collection. J. P. Wetherill, Esq., with his characteristic liberality, has also placed at my disposal his valuable collection, deposited in the cabinet of the Academy of Natural Sciences, and the most interesting specimens belonging to which are submitted to the inspection of the members. Mr Rubens Peale, the proprietor of the remains of the animal described by Dr Godman, has also placed at my disposition those remains, and the inferior maxillary is now in the cabinet of the Society. To the trustees of the University of Pennsylvania and Dr Horner, I am indebted for the opportunity of figuring and describing a very fine fragment of a lower jaw belonging to the Wistar Museum.* The proprietors of the magnificent collection of bones, recently disinterred at Big-bone Lick, by captain Finnel, and now exhibiting at New York, liberally afforded me the greatest facilities in examining that collection, and even allowed me the loan of a highly interesting tooth belonging to it.†

* The trustees of the University of Pennsylvania subsequently allowed this jaw to be deposited, for several months, in the cabinet of the Philosophical Society.

† In this collection there are portions of fourteen inferior maxillary bones of the Mastodon, about one hundred teeth, some enormous tusks, and the most perfect cranium that has ever yet been discovered.

To William Cooper, Esq., of New York, I am indebted for the opportunity of examining the valuable collection of Mastodon bones, in the cabinet of the Lyceum of Natural History of that city; and still further, for having communicated to me some highly interesting specimens belonging to his private cabinet. This liberality will be at once appreciated by the naturalist, when it is stated, that Mr Cooper has himself been long engaged in the investigation of the history of the Mastodon;* that he has visited Big-bone Lick, for the purpose of obtaining materials; and that upwards of a year since, he communicated to the Lyceum of Natural History, New York, some observations on the dentition of that animal.†

We have reason, further to hope, through the exertion of our friend, Professor Patterson, of the University of Virginia, to be able to exhibit to the Society, the lower jaw belonging to the museum of that university, noticed by Dr Godman; and also, to present a description and drawing of that bone.

It may be allowable here to add, that great confidence may be placed in the accuracy of the drawings, which accompany this paper, and which were all taken with the aid of a camera lucida, by Mr Drayton, whose skill and accuracy in his art, the Transactions of the Society bear ample evidence.

Since I had the honour of submitting to the Society, in May last, the preceding communication, I have been favoured by the liberality of the visiters of the University of Virginia, with the loan of the inferior maxillary bone of the *Tetracaulodon*, alluded to by the late Dr Godman in his memoir, published in the third volume, page 478, of our

* The Society may expect to receive from Mr Cooper some of the results of these researches, and we have no doubt that he will supply many of the deficiencies in this memoir. He will also probably describe many bones of the Mastodon, which it would have taken us too far from our main purpose (which was to refute the belief, that Dr Godman's animal was only the young of the gigantic Mastodon) to describe.

† These have not been published, the author being unable to satisfy himself in relation to some points, which we have been so fortunate as to establish from the specimens in the cabinet of our Society.

Transactions; and I have now the gratification of exhibiting it to the Society, and of presenting to them the accompanying description and drawings.

This specimen consists of the right half of the lower jaw, two teeth, the chin, and a portion of one tusk, with the socket for the other. Its length is two feet three inches; height, from the base of the ramus to the upper edge of the alveolar process, six inches.

In general form, this bone corresponds in the most marked manner with two of the specimens belonging to the Society, and one of which is represented in Plate XXVIII. The muscular impressions and tuberosities, at the outer and posterior portion of the jaw, are, however, less strongly marked in the former as was to be expected from the difference in age of the animals. It will be also observed, that the anterior and upper edge of the coronoid process projects forward in the latter; but it must be recollected, that that part is mutilated in the jaw represented in Plate XXVIII.

The condyloid process is deficient, and the upper edge of the semilunar notch and of the coronoid process is slightly mutilated.

The posterior tooth is contained in a bony cavity, at the base of the coronoid process, but is visible at the inner aspect of the jaw. It has eight points and a large talon: it is impossible, from its position in the jaw, to obtain correctly its admeasurements.

Anterior to this tooth is another, possessing six points, slightly worn: it is four inches and nine-tenths long, and three inches six-tenths wide.

Portions of the sockets for the two teeth immediately preceding this still remain, but, unfortunately, the teeth are lost. Had they been still in the jaw, it would have enabled us to settle the point respecting the number of teeth possessed by the animal.

The anterior surface of the chin is slightly mutilated. The plate of bone, forming the base of the sockets for the tusks, is deficient. The left alveolus is empty, the right contains a fragment of a tusk. This tusk extends, anteriorly, but slightly beyond the chin; it projects somewhat inwardly, apparently driven in by violence; its anterior extremity is smooth; its base is cup-shaped.

The accompanying drawings are so accurate as to render further description unnecessary.

EXPLANATION OF THE PLATES.

All the figures are one-fourth the natural size.

Plate XX. Two views of a fragment of the lower jaw, left side, of a young Mastodon, in the cabinet of the American Philosophical Society.

Fig. 1. External view. Fig. 2. Superior view.

m. n. o. Alveoli from which the teeth have fallen out.

c. Molar, with three denticules.

d. Molar, with three denticules.

r. Mental foramen for nerve and blood-vessel.

Plate XXI. Three views of a fragment of the lower jaw, left side, of an adolescent Mastodon, in the Wistar Museum, University of Pennsylvania.

Fig. 1. Exterior view. Fig. 2. Superior view. Fig. 3. Interior view.

f. Posterior molar, with five denticules and a heel.

e. Penultimate molar, with three denticules.

Plate XXII. Fig. 1 and 2. Two views of a small fragment of the lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.

Fig. 3 and 4. Two views of a molar tooth, upper jaw, of a Mastodon, in the cabinet of the American Philosophical Society. This tooth appears to differ from any hitherto described. It resembles the teeth represented in Cuvier, (Ossemens Fossiles, Plate IV. fig. 1, 3, 4, and 6, Divers Mastodontes) in the enamel being crenulated; but it differs from them in the arrangement of the enamel. It is probably an undescribed species, and we propose to dedicate it to our estimable friend, the distinguished professor of the institutes and practice of medicine in the University of Pennsylvania, and Vice-President of this Society, Dr Chapman.

Plate XXIII. Two views of a portion of the lower jaw, right side, of the *Mastodon giganteum*, in the Baltimore Museum.

f. Posterior molar.

p. q. Anterior mental foramina.

s. Foliated expansion of the chin.

x. Depression in the articulating surface of the condyloid process.

y. Foramen for the passage of the inferior maxillary nerve, and artery to the teeth.

Plate XXIV. Two views of a fragment of the lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.

f. Posterior molar, with four points and a broad heel.

e. Penultimate molar, with three points.

Plate XXV. Two views of a fragment of a lower jaw, right side, of a Mastodon, in the cabinet of the American Philosophical Society.

f. Posterior molar, with four points and a broad heel.

e. Penultimate molar, with three points.

Plate XXVI. Fig. 1 and 2. Two views of the fragment of a lower jaw of a young Tetracaulodon, in Peale's Museum, New York, described by Dr Godman, in Vol. III. N. S. of the Transactions of the American Philosophical Society.

a. Anterior milk molar, with two denticules.

b. Second milk molar, with two denticules, and a small process.

c. Third milk molar, with three denticules.

The tusk belonging to this jaw is accurately represented in Plate XVIII. fig. 2, in Vol. III N. S. of these Transactions.

Fig. 3. Tusk of an adult Tetracaulodon, in the cabinet of the Academy of Natural Sciences of Philadelphia, deposited by J. P. Wetherill, Esq.

Plate XXVII. Three views of a portion of a lower jaw, right side, of an adolescent Tetracaulodon, in the Museum of the University of Virginia, and to which allusion is made by Dr Godman, in his memoir in the preceding volume of these Transactions.

f. Posterior molar, with four denticules and a heel.

e. Penultimate molar, with three points.

Plate XXVIII. Two views of a portion of the lower jaw, right side, of an adult Tetracaulodon in the cabinet of the American Philosophical Society.

f. Posterior molar with four points.

p. q. Mental foramina.

r. Radiated muscular impressions.

t. t. Tubercles, where the muscle was inserted.

v. Inner point of second denticule.

The socket for the tusk could not be exhibited, but its situation is shown by the dotted line representing a tusk.

Plate XXIX. Two views of a fragment of a lower jaw, right side, of an adult Tetracaulodon, in the cabinet of the American Philosophical Society.

x. Excavation between the coronoid process and posterior molar.

f. Posterior molar, with four points and a heel.

z. Socket for tusk.

Philadelphia, December 2, 1831.

ARTICLE X.

On Irradiation. By Benjamin F. Joslin, M.D., Professor of Mathematics and Natural Philosophy in Union College, Schenectady, New York. Communicated by Dr Isaac Hays. Read July 15, 1831.

ASTRONOMERS generally admit the existence of a species of dilatation of the apparent magnitudes of luminous bodies, which is called *irradiation*, the amount of which has not been exactly measured, nor the cause explained on any physical or physiological principle: and as it produces an augmentation of the apparent diameter of the sun's disc, they are compelled to make an approximate allowance for it in the calculation of eclipses, whose time of beginning and duration, as calculated from the measured apparent diameters of the sun and moon, it is thought sensibly to affect.* I am not aware that this amplification has been suspected to be greater in one direction than another. This may be one reason why its influence on particular phenomena has not been more accurately ascertained, and why its assumed value has been justly considered so unsatisfactory an element in astronomical calculations.

I shall state some of the laws of this phenomenon, which I think I have established, and particularly the determinate directions in which the maximum irradiation generally takes place in the human eye. I shall also propose an hypothesis respecting the cause of this phenomenon, or at least its connexion with a certain anatomical structure.

I know not whether there is any plausible hypothesis respecting the

* It does not however affect the *actual* time.

cause of irradiation. The subject is rarely mentioned in books, and still more rarely is there found any thing but a bare mention of the fact. M. Biot, in his valuable work on physical astronomy, avoiding, as usual, every expression which might involve any hypothesis not apparently warranted by known facts, has the following incidental notice of this subject, with reference to the phases of Venus. "Ces diminutions et ces accroissemens ne sont pas sensibles à la vue simple, à cause de l'irradiation qui dilate un peu les diamètres apparens des objets, et d'autant plus qu'ils sont plus éclairés." This expresses the fact of the dilatation, and its increase as the objects are more luminous. This is probably the only law of the phenomenon hitherto known. I have searched several works on physiology, optics and astronomy without finding any thing written expressly on this subject, except a single page in Delambre's complete work on theoretical and practical astronomy, from which the following extracts have been made. "On a supposé que les diamètres des objets lumineux étaient amplifiés par l'*impression vive* que leur lumiere produit sur l'organe de la vue ***** qu'il faut dépouiller le sòleil de cette couronne lumineuse qui l'entoure, non pas en réalité, mais dans notre œil ***** c'est un point qui n'est pas encore suffisamment eclairci."

From the last of these extracts (referring apparently to the existence, precise amount and cause of this amplification), we learn that it requires further investigation; from the second, that it is believed to exist only in the eye; and in the first, there seems to be an intimation that it depends upon the sentient part of this organ. It, therefore, appears to be an interesting and legitimate object of physiological inquiry.

I am far from professing to be able at present to supply all the desiderata on this important subject, yet I cannot but hope that I may have facilitated the attainment of this object, by the discovery of some new laws of irradiation, and perhaps the anatomical structure, if not the optical principle on which it depends.

One new law, which I think established by induction from numerous facts, may be enunciated as follows. There are determinate directions of maximum irradiation for every individual: these in man, for ordinary vision, are generally three in number, and are at equal angular distances, which are consequently one hundred and twenty

degrees, or one third of the circumference of the circle; one direction being, in the erect position of the head, directly upward in a vertical visual plane passing through the centre of the luminous object, the two other directions obliquely downward, in visual planes which respectively make angles with the former and with each other of one hundred and twenty degrees.

Every one has observed a radiated appearance of the stars, and of the flame of a distant lamp or candle. In examining these objects attentively, I discovered that three of these rays were far more conspicuous than the others, and were equidistant from each other, and that one of them was directed vertically upward. Among the heavenly bodies this was more conspicuous in the larger and brighter planets, and in the fixed stars of the first magnitude.*

By repeating similar observations on luminous objects at less distances, as the flames of lamps and candles at distances varying from a few feet to several hundred, it was found that the dilatations in those determinate directions were by no means confined to the narrow, faint and elongated radiations which constitute the more obvious features of the stellar appearance, but that the body of the flame itself assumed a distinctly triangular figure, in consequence of a dilatation in precisely the same three directions.

In order to divest the results of any influence produced by the actual figure of the flame, as well as to determine the effect of different magnitudes, a circular metallic plate was mounted on an horizontal axis with liberty of motion in a vertical plane at right angles to the visual ray, and pierced with unequal circular holes disposed in a circle concentric with the axis; by the occasional rotation of the plate these were successively brought between the eye and the flame, very near the latter; and their successive projections upon it afforded luminous objects perfectly circular. Different wires, meeting at the centre of the aperture, and stretched in a plane parallel to and near the disk, and furnished with movable beads, afforded a simple instrument for determining the direction and extent of the irradiation; though the

* To the well known radiated appearance, especially that of the sun, the Latin writers applied the term coma. Hence, *sol auricomus*, the sun with golden radiations.

determination of the latter has not as yet been attempted with much precision, but was found, as might be expected, to increase with the intensity of the light.

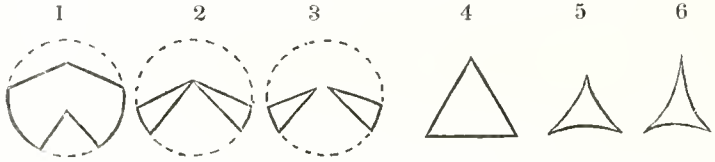
With this apparatus the preceding results were verified, and others obtained. At a distance of from five to fifty feet, the luminous object, actually circular, presented the appearance of an equilateral triangle, whose outlines were pretty well defined, especially when the metallic disk was illuminated on the side next the eye by another candle, in order to render the retina insensible to the extremities of the narrow and especially the irregular radiations. At greater distances, the aperture being of the same magnitude, the narrow radiations became more conspicuous, the regular ones always predominating. An increase in the magnitude of the object increases the distance requisite to produce the distinct triangular appearance. With an object one-tenth of an inch in diameter, it is most distinctly seen at the distance of six or eight feet; with one of one-fifth of an inch, at twelve or fifteen feet. It is also seen pretty distinctly at double these distances respectively, and with large objects at a great and probably indefinite number of miles, provided their angular magnitude is sufficiently great to prevent the preponderance of the narrow rays, and yet not so great as to render this change in form imperceptible. With an object whose light is originally faint, or rendered so by traversing a great extent of atmosphere, the effect is less, and may become insensible.

The foregoing experiments were varied and the principal results verified, by viewing opaque objects surrounded by luminous ones, instead of luminous ones surrounded by an opaque one as before. A single example may suffice. A circular opaque disk, projected on the flame of a candle, but extending beyond it laterally, appeared deprived of two superior oblique segments, by downward and oblique dilatations of the superior part of the flame in the same directions as in the former experiments; also of a kind of sector at the inferior part, by the upward vertical dilatation of the inferior part of the flame. In consequence of the encroachment of the flame upon the disk in these three directions, as the observer receded from it the disk was reduced in magnitude and changed in form, and finally, by the encroachment of the inferior portion of the flame by upward irradiation, was divided into

two lateral portions. This was in exact accordance with preceding results.

The experiments hitherto related have, at my request, been since repeated by others, and their verification, in almost every instance, establishes the following general law. *There are determinate directions of maximum irradiation for every individual: these in man, for ordinary vision, are generally three in number, and are at equal angular distances, and consequently one hundred and twenty degrees or one-third of the circumference of the circle; one direction being, in the erect position of the head, directly upward in a vertical visual plane passing through the centre of the luminous object, the other two directions obliquely downward, in visual planes which respectively make angles with the former and with each other of one hundred and twenty degrees: the decrements of dilatation in other directions are nearly symmetrical and equal with respect to these three directions, and the apparent form of the object approximates more or less to that of an equilateral triangle, according to its brightness, distance and magnitude.*

Figures 1, 2 and 3 represent the apparent forms of an opaque circular body projected upon a luminous one; and 4, 5 and 6, those of a luminous circular body projected upon or surrounded by a dark one.



In these last, as well as in the former experiments, the dilatation increased with the distance; it also increased with the intensity of the light. In fact, on this last account, a straight horizontal rod, by the apparent curvature of its lower edge when projected on the flame of a candle, becomes a tolerably delicate photoscope, for detecting the less degree of illumination of the interior of the flame at heights above the base where the difference between the interior and exterior brightness is inappreciable by direct and simple observation.

During the experiments with the circular luminous objects, when the head of the observer was inclined to the right or left any number of degrees, the vertices of the luminous triangle, as also the long radia-

tions, were found to undergo a change of absolute position exactly correspondent in direction and extent with that of the head, whilst their relative position remained invariable. This proved that the phenomenon depended on no cause exterior to the human body. When an opaque substance was interposed between either eye separately and the object, the triangular appearance was preserved, but the inferior vertex was more obtuse and the oblique radiation shorter on the side of the eye whose vision was obstructed. This proved that the effect depended in part, but not chiefly, upon the combined action of the two organs. Moreover, as the appearance was unaffected by the careful removal of the ciliae and eyelids from before the cornea, and as I had long since examined the separate effect of the tears, it appeared evident that irradiation depended upon none of the tutamina oculi, but was to be referred either to the refracting or sentient parts of the proper organ of vision.

Several considerations seemed to me to exclude the latter. If a vivid impression on any spot of the retina could produce a similar affection of adjacent parts, there is no obvious reason why this sympathetic affection should be more widely diffused in certain determinate directions which sustain no possible constant relation to the distribution of its fibres or to its structure in any respect; directions which are constant both in the case of oblique and of direct vision, and on whatever part of the retina the image may be situated, with respect either to the optic nerve or the centre of its medullary and membranous expansion. The views which were suggested by considerations of this nature, were confirmed by subsequent experiments; experiments which proved the phenomenon under consideration to be independent of any peculiarity in the sensation, and the retina to have no share in its production, in any other sense than as it is essential to vision in general.

When most of the preceding experiments had been made, I, for the first time, thought of the striking coincidence between this dilatation of luminous bodies in three equidistant directions, and the three equidistant sets of fibres and three equidistant radiated lines, exhibited in the front view of the crystalline lens of the ox, as represented by that eminent philosopher, the late lamented Thomas Young, M.D., in his

"Observations on Vision."* He afterwards learned that these three sets had been previously seen, though less accurately observed, by Leeuwenhoek. Dr Young describes each coat as consisting "of six series of fibres, intermixed with a gelatinous substance, and attached to six lines which have somewhat of a membranous appearance. Three of these lines or tendons are anterior, three posterior; their arrangement is that of *three equal and equidistant rays meeting in the axis of the crystalline.*" He adds, "I have not yet had an opportunity of examining the *human crystalline*, but from its *readily dividing into three parts*, we may infer that it is similar to that of the ox." Here I conceived I had found a clue to the cause of the phenomenon, in a structure which seemed calculated to produce an action symmetrical with respect to three equidistant radii of the crystalline lens; a structure to which there appears to be nothing analogous in any other part of the organ of vision. The deviations from this arrangement of the fibres, which may have been detected by Dr Young and others, will not be at present considered,† and will not probably affect the proof of a connection between irradiation and the structure of the crystalline, so long as there exists the *more obvious division of this body into three similar sphenoidal portions.*

In the prosecution of these researches on the subject of irradiation, I have made several other experiments, especially with the pupil preternaturally dilated. These will not be at present detailed, but reserved for a future communication. I shall, however, venture to state some of the inferences which they appear to justify, which are the following.

1. That irradiation is produced directly and chiefly by the crystalline lens, but affected by the iris. 2. That the different fasciculi of the fibres of the crystalline exert, in some respects, a similar though

* Young's Natural Philosophy, Vol. II. p. 525.

† The greater number of fasciculi which Dr Young subsequently detected, and their occasional diversity and irregularity may perhaps explain the existence of intermediate radiations in all eyes, and the absence of one of the more conspicuous and regular ones in some rare instances. But I shall not venture to attempt an exact account of the optical and anatomical structure of the lens, cornea and iris, and their correspondence with the other laws of irradiation which I may have discovered, until I shall have had access to the papers of Dr Brewster and Sir E. Home on the former subjects, only a brief notice of which has been inserted in the scientific journals.

unequal action on light. 3. That the central and lateral parts of this body conspire in different degrees to produce irradiation: the effect increasing with the absolute distance of the incident ray from the axis of the crystalline, and consequently with the magnitude of the pupil. 4. That there are two distinct species of irradiation, in consequence of which the unequal luminous border superadded to the perfect image on the retina, by this kind of aberration, is composed of two distinct though partially superimposed parts, of different colours, the superimposed portions of which on any one point of the retina, are produced by the action of opposite wedges of the crystalline.

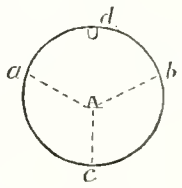
A popular *application* of the foregoing results is, that *we never see luminous objects of their true shape*. Of the existence of this species of optical illusion, any person may readily convince himself, by examining the flame of a candle when near it, and then withdrawing to the distance of thirty or forty feet, or even across an ordinary room. How frequently must we have been deceived in our estimate of form as well as magnitude! It is unnecessary to dwell on the importance of being apprized of an illusion, which affects in no small degree the testimony of one of our most interesting and valuable organs of sense.

We learn also from the results which I have obtained, that the appearance of luminous objects, with respect to position, shape, and occasionally colour, is materially affected by their brightness and distance, and by the *position of the head*, and the *magnitude of the pupil or other aperture* through which the rays are admitted into the eye; and that these effects are constant for the same individual, in the natural state of the eye, and, with few exceptions, essentially the same for all.

On these principles we may probably explain the *apparent projection of a star upon the moon's disk* at the time of an occultation, a phenomenon which has occasionally astonished the ordinary and accidental observer, and been "at all times an interesting and important subject to the astronomer,"* to whom it has been perhaps scarcely less inexplicable. It appears to me that irradiation affords a solution, and that the laws I have detected may enable us to explain and even to predict the apparent anomalies: viz. its being more frequent in the

* American Almanac for 1831, p. 34.

case of particular stars, its not always existing in the occultations of the same star, nor being seen by all individuals. If this theory be correct, the existence of this phenomenon, and the distance to which the star is thrown upon the moon's disk, depend upon the position of the head of the observer, and the relative direction of the moon and star at the time of immersion or emersion. The more frequent appearance of this phenomenon in the case of the brighter stars, and on the luminous side of the disk, seems to depend upon the greater dilatation of the more luminous bodies, whilst the duration will depend upon the magnitude of the star, and the direction of the moon's motion. The effect of position will be understood from the following experiment in connection with the foregoing statements. A circular opaque disk, A, was placed between the eye and a luminous circle, of which a part projected beyond the edge of the disk. At *a*, *b* and *c*, the stellar or radiated appearance was most conspicuous on the disk, whilst at *d*, near the superior part, it appeared more like a real luminous body on the disk, of a *reddish* colour, and well defined, and almost or entirely projected on it. By inclining the head, the places where these phenomena were most perfectly exhibited, suffered a corresponding change, their relative position remaining invariable. The appearance at *a*, *b* and *c* is in accordance with what has been herein stated with respect to the three directions of maximum irradiation; that at *d* will be explained by experiments which I had previously made on the human eye, and which will be hereafter published with a generalization of the facts.



Among the *other astronomical applications* of the laws of irradiation, the following may be mentioned. During a partial solar eclipse, a faint light is sometimes seen to be thrown on the moon near the horns of the sun, and to be brighter and longer on one side than on the other.* Moreover, I have observed one of the horns of the new moon (though apparently not more luminous than the other) to project farther than the other from the dark portion of the disk, according as they were situated with respect to the directions of maximum irradiation.

* Edinburgh Philosophical Journal, Vol. III. p. 393.

The fixed stars appear larger when viewed with the unassisted eye than when we employ a good achromatic* telescope. For a similar reason, the planet Venus, being, from its vicinity to the sun, strongly illuminated, may appear larger than Jupiter to the eye, whilst Jupiter appears larger than Venus with a telescope of such an aperture and magnifying power as to diminish the brightness and consequently the irradiation. If the construction is such as to admit but a small pencil into the eye, another cause will be found to conspire, which is the *less* amount of *irradiation* (and probably the different laws of it), for the light which is transmitted *near the axis* of the crystalline lens. This follows from the experiments already alluded to on the influence of aperture.

I shall not, however, at present, anticipate any other results of those experiments on the influence of aperture on irradiation, except to suggest the possibility of applying them to the explanation of the *twinkling of the stars;* a phenomenon hitherto entirely referred to causes purely physical, but the true cause of which is admitted to be "not fully ascertained."†

As the fixed stars are highly brilliant bodies, subtending an exceedingly minute angle, their apparent magnitudes depend almost entirely upon irradiation; and it is hence easy to conceive that any alternate and transient changes in this affection may occasion oscillations in their images on the retina. Is it not therefore possible, that this phenomenon may be affected if not produced by transient remissions of irradiation? If irradiation shall be shown to depend directly or indirectly on the crystalline and iris, it is possible that oscillatory motions in either might produce such remissions. With respect to the existence of such motions, Dr Wollaston has shown that muscular effort, when apparently continuous, consists, in reality, of a great number of contractions repeated at extremely short intervals. It may be added, that there are alternations of contraction and dilatation of the iris, which are of sensible duration and extent, and visible by direct observation.

* Or rather aplanatic, free from both species of aberration.

† Young's Natural Philosophy, Vol. I. p. 490.

Schenectady, March 4, 1831.

ARTICLE XI.

Names which the Lenni Lenape or Delaware Indians, who once inhabited this country, had given to Rivers, Streams, Places, &c. &c. within the now States of Pennsylvania, New Jersey, Maryland and Virginia: and also Names of Chieftains and distinguished Men of that Nation; with the Significations of those Names, and Biographical Sketches of some of those Men. By the late Rev. John Heckewelder, of Bethlehem, Pennsylvania. Communicated to the American Philosophical Society April 5, 1822, and now published by their order; revised and prepared for the press by Peter S. Du Ponceau.

Philadelphia, September 16, 1833.

DEAR SIR,

I have the pleasure of sending to you the late Mr Heckewelder's communication respecting Indian names, prepared for the press. When he handed it to me to be presented in his name to the Philosophical Society, he requested, that in case it should be ordered to be printed, I would revise it in the same manner as I had done his account of Indian nations published in the first volume of our Historical Transactions. Such revisal was particularly necessary, as, the writer being more familiar with the German than with the English language, his Germanized style required correction, and at times he was not as clear as he wished to be. I have therefore, availed myself of the liberty thus given to me, but only in a moderate degree; being desirous to preserve the plain honest language of the venerable author, as far as I could make it consistent with the English idiom. I have preserved

his method throughout, and only expunged some repetitions, and struck out some Indian names, of which he gave no explanation*, and which only served to fill up space to no purpose. I have also left out an abstract of the successive treaties made with the Indians, which, besides that it has no immediate relation to his object, is to be found nearly in the same words in the second volume of Smith's Laws of Pennsylvania. I have taken care to preserve the original manuscript, which still remains in the Society's library, and will show in what manner I have complied with the author's request.

In executing this task I have been particularly struck with the etymology which Heckewelder ascribes to the name of the river Ohio. I had imbibed, with many others, the idea that it was derived from the Iroquois idioms, and in that persuasion, I had at first paid little attention to the author's arguments. On perusing them again, they appeared to me to have considerable force, and I determined to consider the subject with more attention. In consequence I recurred to the copious dictionary of the Onondago language, by Mr Zeisberger, which is in our library. It has been said that the Iroquois called the Ohio sometimes the fine or beautiful, sometimes the bloody river. I therefore looked for the words *fluss* (river), *blut* (blood), and *schœn* (fine, handsome, beautiful); I found *geihate*, *geihutatatic* for *river*, and the word *blood* rendered by *otqueehsa*. To neither of these can the name of the river Ohio be traced. For *beautiful* (*schœn*), I found two words, *wazœnaji* and *ojaneri* (the *j* in the latter to be pronounced like our *y*, so as to read *oyaneri*). The two first syllables of this word bear indeed some resemblance to *ohio*, but in examining the numerous examples given by Zeisberger of the use of these two words, I found that the first, *wazœnaji*, is alone employed to express *external beauty*, as when you say, a fine or handsome person, a fine leg, a fine field, and the like; while the latter, *ojaneri*, is only used to describe the manner in which something is executed, and answers, in

* Among those is *Tinicum*, the name of an island in the Delaware, which was once the seat of the Swedish government. The Swedes called it *Tennakong*, which we have changed into *Tinicum*. It appears to me that *ong* in the Swedish name of that island is the locative termination *unk*, and I presume the remainder of the word may be *Tskennak*, which means a black bird, so that it should be *Tskennakunk*, or *Black Bird's Island*.

fact, to our word *well*. Thus you say *ojaneri zanijawenote*, to read well; *ojaneri zanuwachiato*, to write well; *ojaneri zanihŏrichwacqua*, he sings well, &c. It is not, therefore, from *ojaneri*, that the proper name *Ohio* is to be derived; it seems much more properly to be traced to the Delaware, and to mean the *white*, or the *white foaming river*, and to have been abridged by the English traders from some of the numerous words implying that signification, cited by Mr Heckewelder. The French name *Belle Rivière* is clearly not a translation from the Indian.

I have remarked, not without astonishment, from a passage in this little work, that the Delaware Indians were acquainted with *silk* and *silk worms*. There is a place, it seems, in Old Northampton county, in Pennsylvania, which the Indians called *Nolamattink*, and which, according to Mr Heckewelder, means "the place where the silk worms *spring up*," that is to say, mount, in order to spin their cocoons. He adds that the mulberry trees grew in that place spontaneously.

Referring to Zeisberger's Delaware Vocabulary, p. 59, I find that *nolemutees* means a *silk worm*, whence *Nolamattink* is evidently derived. But what kind of silk worm is it that is a native of this country, and feeds on the leaves of the mulberry? Mr Moses Bartram, in the first volume of the American Philosophical Transactions, p. 224, has given an account of a native silk worm, which he calls the wild silk worm, and which he found on the banks of Schuylkill. But that insect, as he describes it, differs very much from the Chinese silk worm, and besides, Mr Bartram tells us that it fed on the leaves of the alder and of the apple tree, and on those of the *viburnum* or black haw bushes and of the wild crab tree; while it seems, that the worm mentioned by Mr Heckewelder, like that of China, fed on the leaves of the mulberry. Without wishing to enter into any further disquisition upon this subject, I have thought it well at least to point out this Indian name for further investigation. I am, respectfully, dear sir,

Your most obedient humble servant,

PETER S. DU PONCEAU.

FRANKLIN BACHE, M.D.
Chairman of the Publishing Committee.

INTRODUCTORY REMARKS.

1. Most of the Indian names and words herein contained, are copied from maps, books and records, while others have been received directly by me from the Indians. In the former case, I use the common orthography, and the names as tradition has given them to us, which I have called *popular names;* but I place next to them the same names as given by the aborigines, and in every case I add the signification in English whenever it is in my power to do it.

2. The Delaware Indians want the letters *f*, *r* and *v*. It seems that in the time of the Swedes, the tribes who lived on the banks of the Delaware used the letter *r* instead of *l*. Those tribes were extinct when I came to this country, and I have never known a Delaware Indian that used the letter *r*. These facts have not always been attended to in the English spelling of those names. Most of the faults which exist in the common spelling of Indian names are owing to the want of an Indian ear.

3. I have in the spelling of Indian names (where I do not copy them from books, maps or records) adopted the German orthography, conceiving that the powers of the German alphabet are better calculated than those of the English to convey the true sounds of a foreign idiom.

4. The terminations *ink*, *enk* and *unk* are indicative of place; *Shakameksink* or *Shakameksung* means at *Shakamek*.

JOHN HECKEWELDER.

INDIAN NAMES OF RIVERS, STREAMS, AND OTHER NOTED PLACES IN THE STATE OF PENNSYLVANIA.

PHILADELPHIA, DELAWARE, CHESTER, MONTGOMERY, AND BUCKS COUNTIES

Popular Names.	Proper Names, with Remarks.
Coaquannock.	Cuwequenáku. The word signifieth *the grove of long pine trees.* The city of Philadelphia goes under this name by all the Delaware Indians. See Proud's Hist. of Pennsylvania, page 150.
Delaware River. . . .	Lenapewihíttuk, *Indian river;* and Kithanne, *the largest river in the part of the country.*
Schuylkill.	Ganshowéhanne, or (short) Ganshowéhan (*der rauschende Ströhm* in German), *the noisy stream*, occasioned by falls and ripples. It is also called Menciunk.
Manayunk.	Menéiunk, *our place of drinking* (*liquor*), *our place of assembling to drink.* It is another name for the river Schuylkill.
Playwicky.	Plauwikit, *the habitation* (*village*) *of those who are of the Turkey tribe.*
Towassimok.	Dawásimók, *the feeding place for cattle, the pasture grounds.*
Neshamanies. . . . . Neshammonys. Neshaminy.	Neshàmhanne, *two streams making one* (by flowing together). The word is compounded of the words nischa *two*, and amhanne *river.*
Makerisk Kitton. . . . Maskeusk Kitton. Makerisk Hitton. Makeerick Kitton.	These words, so differently written in the deeds, appear to be designed to name a particular place on or in the river Delaware. It is to me clear, that it is intended for the Trenton Falls; and I presume the words here given are meant to answer to these falls. Máskane is *strong, rapid;* maskhanne, *a rapid stream;* kíthanne main, *largest stream.*

Popular Names.	Proper Names, with Remarks.
Shakamaxôn.	Schachaméksink, *place of eels.* Schachamek is the name of that fish; *s* is added for euphony.
Pemmapecka. Pemapack. Pemapeck. Pennepack.	Pemapéek, *pond, lake* or *bay; water having no continual current; a narrow long pond.*
Poquesing. Poquessan.	Poquesink, *the place abounding with mice; the place of mice.* Poques, *a mouse.*
Chickhansink.	Tschikhansink, *where it was taken from us; the place where we were robbed.*
Macopanackhan.	Mæchoppenackhan, *the large potato stream; the stream,* or *creek, on which the large potatoes are* (or *grow*).
Pakihoma. Pakioma. Perkioming.	Pakihm-omenk, or pakiomink, *the cranberry place; the place where the cranberries grow.* Pakihm is the name of that fruit.
Wissahickon. Wisahiccon.	Wisamêkhan, *catfish creek.* Wisawíkhan, also Wisauchsican, denote *a stream of yellowish colour.*
Wingohócking.	Wingehácking. The word implies, *choice land for planting* or *cultivating, a favourite spot, fine land,* &c.
Wisinaming.	Wischanemunk, *where we were frightened, put to flight.*
Manatawny.	Menhattanink, *where we drank* (*liquor*). Menatewink, *on the island.*
Skippack.	Schkipeek, *standing, stinking pool of water.*
Serechen.	Silehend, Sinuéhend, *the dairy, the place where milch cows are kept.*
Quing-Quingus	Quiquíngus, the species of duck which we call the *grey duck,* the male of which has a green coloured head. Kikitschimais is that species of the duck which we call the *wood duck,* because they build their nest in hollow trees. The word implies, *the calling duck;* it calling loudly to its mate.
Tohickon.	Tohíckhan or Tohickhanne, *the stream over which we pass by means of a bridge of drift wood.*

Popular Names.	Proper Names, with Remarks.
Nockomixon. Nockanixon.	Nachaníxìnk, *at the three houses*, or *where the three houses are*: nacha, *three*; wikwam, *a house*; ink, *local termination*.
Lackamissa.	Legauimsa, legauīksa, *the sandy ground, the sandy spot of land*.
Cohocksink.	Cuwenháekink, *pine lands, where the timber is principally pine*.

NORTHAMPTON AND LEHIGH COUNTIES.

Saucon Creek. Saconna.	Sáeunk. This word properly denotes the *outlet of a smaller stream into a larger one*. It is common, and is used in the same sense among many tribes of Indians connected with the Delawares. The Chippeways say *Sagginow*.
Macungy.	Machkúnsehi, *the harbouring* or *feeding place of bears*.
	Leehauhanne, *the forks occasioned by the conflux of two rivers*, as where the river Lehigh falls into the Delaware at Easton.
Lehikton Leheigton. Lehicton.	Lawithanne. The proper name for the Bush Kill by Easton. The word signifies *a stream between others*.
Easton Town.	Leehauwitank, *the town within the forks*.
Lehigh. Lecha.	Neither of these words is the proper name of this river, which is only known to the Indians by the great crossing place on it. The Indians have three general words whereby they distinguish that which resembles a fork, and are very particular therein. Lèchánwâk is the standard word for every thing that is forked, except with rivers and roads, where a termination is added to that word to distinguish it. Thus, leehau-hanne is the *forks of streams*; leehau-wiehen, *the forks at parting of roads*, or *where these meet together*. They say leehauweki, or leehauwékink, when they speak of the country which *we* call the forks, which word alludes to their great crossing place at the Lehigh (which by purchase of the Bethlehem tract fell within it at its lower end). At this great crossing place various large paths centred on each side of the river; and so, on each side, these took off to the different sections in their country, and to their scattered villages within the same. *See* Lechawaxen.

Popular Names.	Proper Names, with Remarks.
Monakessi. . . . . Monockisy.	Menágassi, or menákessi, signifies *a stream containing several large bends.*
Hockendocque Creek. .	Hackcundôchwe, *they are searching for land.* Probably at an earlier period some surveyors were discovered looking at or surveying land on this creek.
Traxler's Spring . . . . Drechsler's Spring. Toamensing.	Thuppekhanne, *a stream flowing from large springs, a stream from springs issuing from the earth.*
Achquanschicola. . . . Achquanschicolo.	Achquoanschícola, *the brush-net fishing creek,* or *the creek where we catch fish by means of a net made of brush.*
Sankinak	Sankhanne, *flintstone creek,* or *the stream on which flint stones are found.*
Mahoning.	Mahóni, *a deer lick;* mahonink, *at the lick.*
Pokono.	Pockhanne, pokohanne, *a stream issuing from a mountain,* or *running between two mountains;* hence the Broad mountain has received the name of Pocono mountain.
Nesquihoning.	Næskahóni, *black lick,* or *the lick of which the water is of a blackish colour;* næskahónink, *at the black lick.*
Quakake.	Cuwéukeek, or Kuwékêêk, *piny lands.* The creek which runs through these lands bears the name of Kuweuhanne.
Mauch Chunk.	Machktschúnk, *the bear's mountain.*
Pauponaming.	Pápennámenk, *the place where we were gazing* (*looking at a strange object something new occurred to our sight*).
Pohopoka. . . . . Pucheabuchka.	Pockhápócka, *two mountains butting with their ends against each other, with a stream between them* (as is here the case at the Lehigh water gap).
Catosoque.	Gattosàqui, gattosachgi, *the earth is thirsty* (*wants rain*); probably it had been the case at that time and place.
Tunkhanne. . . . . Tunkhannock.	Tankhánne, *the small,* or *smallest stream of the several streams which flow in one and the same direction either to fall into a river or to form a river when they become united.*
Tobyhanne.	Topihanne, *alder stream,* or *a creek on the banks of which that shrub grows spontaneously.*

Popular Names.	Proper Names, with Remarks.
Wechquétank.	Wechquétank, or wiquítank, the name of a shrub; from which an Indian town built near where it grew was so named: this town was eight miles beyond the Blue mountain, in a north-westerly direction from Bethlehem.
Muddy Creek.	Masgeekhánne, *a creek which flows through swampy ground* (on the Broad mountain).
. . . .	Meniolagamíka, the name of an ancient Indian town lying on Achquanschicola creek, north side, and close under the Blue mountain, north west course from Nazareth. The word or name implies, *rich*, or *good spot of land within that which is bad* or *barren*.
. .	Welagamika, the name of an ancient Indian town which once existed on the Nazareth tract, and was forsaken about the year 1748. The word implies, *fine rich soil*, and when the Indians speak of the place Nazareth, they say Welagamikink.
. . .	Nolamáttink. By this name the Indians call the tract of land on which the settlements of Gnadenthal and Christian's Spring are. The word implies, *the place where silk worms spring up*, or *mount, silk worms' place*. The black mulberry tree grew at that time here and on the Nazareth tract spontaneously.
Menesink.	Minissink. The word implies *the habitation of the Minsi tribe of Delawares*.

WAYNE AND PIKE COUNTIES.

Walenpapeek Creek. . .	Wahlinkpapeek. The word implies *deep and dead water*. Probably there is such a place or places in the creek or river.
Shahola.	Schauwihilla, *weak, faint, depressed*.
Lackauwaxen. . . . . Lechawaxen.	Lechauwèksink, *the forks of the road*, or *the parting of the roads; where the roads take off in various directions*. There is on the Lehigh, in Northampton county, a place bearing the same name, for the same reason.
Equinunk.	Equínunk, *the place where we were provided with articles of clothing, where wearing apparel was distributed to us*.

Popular Names.	Proper Names, with Remarks.
Mashope.	Maschápe, or mashapi, *beads of glass.* Probably this article was given them at that place or sold there.
Shohokin.	Schohacan, *glue.* Probably this article had been manufactured there either by the Indians or white men. The Indians make an excellent glue out of the deer's horn to glue on the feathers to their arrows.

BERKS AND SCHUYLKILL COUNTIES.

Tulpehoccon.	Tùlpewihacki, *the land abounding with turtles, the turtle country.*
Cocoosing.	Gōkhósing, *the place of owls, resort of the owls.*
Manakasy.	Menagassi, *crecks with some large bends.*
Menatawny.	Menetónink, *where we drank* (*were drunk*).
Maxatawny.	Machksithanne, *bear's path creek*, or *the stream on which the bears have a path.*
Sacony.	Sacunk, *the outlet of a stream* or *creek.*
Moselem Creek. . . .	Maschilamêkhanne, *trout creek.*
Oley.	Olink, wólink, olo, or wahlo, signifies *a cavern cell, sink hole; a dug hole to bury any thing in*, as also *a tract of land encompassed by high hills* (which is here the case).
Wapwallopen. . . . . Whopehawly.	Waphallackpink, *the place of white hemp*, or *the place where that kind of* (*wild*) *hemp grows in abundance which when dressed becomes white.*
Catawissa.	Gattawísi, *becoming fat.* Probably a deer had been shot there at the season when they begin to fatten.
Tombicon.	Tombícanall, *crab apple, place of crab apples;* tombîkhanne *crab apple creek.*
Mahantango.	Mohantángo, *where we ate plentiful of meat.*
Mahonoy. . . . . Mohony.	Mahoni, *a lick* (*deer, buffalo* or *elk lick*).

Popular Names.	Proper Names, with Remarks.
Tamaquon.	Tamaquehánne or (short) Tamâkhanne, the Indian name, as it stands on record, of Little Schuylkill. The word signifies *beaver stream*, a stream on which the beavers were numerous, where they built dams and mud houses to dwell in.

LUZERNE AND SUSQUEHANNA COUNTIES.

Wyoming.	M'cheuómi, or m'cheuwámi, which signifieth *extensive level flats*. In consequence of the large falls on this river it is called "M'chweuwami Sipu" by the Delawares and by the Six Nations; it is for the same reason called "Quahonta," which two words or names signify *a river having large flats on it.*
Hoppeny Creek. . . .	Hobbenisink, *potato creek, the creek on which the wild potato grows in abundance.*
Tankhannok.	Tankhanne, *the smaller stream.*
Whopehawly.	Woaphallachpink, *the place of wild hemp.*
Lackawannok.	Lechawahhannek, *forks of the river;* also, Lechauhanne, *forks of a river.*
. . . .	Quilútámende is the name given to a certain spot or place a short distance above the mouth of Lechawahhanne; which place lies between a steep mountain and the Susquehanna river, in a narrow bottom, and where, as they say, in their wars with the Five Nations, they fell by surprise upon their enemies. The word or name of this place, quilútamend. is, therefore, *where we came unawares upon them*, &c.
Nescopeck.	Næskehöppeek, means *blackish, deep, and still water;* and is so called from a place of that description on the Susquehanna.
Meshoppen Creek. . .	Mashapi Creek is so called from a distribution of glass beads being here made among them. Mashapi signifies *glass beads.*
Appolaccon Creek. . .	Apelogácan, or apalochgácan (Minsi), *the place whence the messenger returned.*
Choconat Creek. . . .	Tschúhnot (a Nanticoke word).

Popular Names.	Proper Names, with Remarks.
Coshecton.	Gichiéchton, *finished, completed.*
Conewanta.	Guneúnga, *they staid long away.*

ONTARIO, TIOGA, AND LYCOMING COUNTIES.

Wyalusing Creek. . . .	M'chwihillusink (properly) is, *at the dwelling place of the hoary veteran.* An ancient warrior having resided on that creek about one mile above the town, was the cause of this place being so named, in remembrance of him.
Wappasuning Creek. . .	Wapasinnink means, *at the place where the white shining stone* (or *metal*) *is.* They call *silver* wapachsinn.
Wisaukin Creek. . . .	Wisachgim, *grapes;* wisachgimi, *the place where grapes grow in plenty.*
Towanda, Tawandee. . . Awandee.	Tawundeunk, *the burial place,* or *where we inter the dead.* The Nanticokes buried the bones of their dead at this place.
Shummonk.	Shúmmonk, *the place of the large horn.*
Cowanesque.	Gawunschesque, *briary, thorny, full of prickles.*
Tioga.	Tióga. This name was given by the Five Nations to that particular spot or neck of land where the east and west branches of the Susquehanna form a junction. The word signifieth *gate, entrance, place to enter in at*—the Iroquois country, the north side of both these branches of Susquehanna, being then considered as belonging to them, while all the country south of these rivers belonged to the Delawares. David Zeisberger, who, as early as the year 1750, had travelled to Onondago by the way of this place, Tioga, said that some of the Five Nations were stationed there for the purpose of ascertaining what persons were coming into their country; and that by them it was considered an offence to enter into it at any other point or place than either through this gate (pass) or by way of the Mohawk river; and that any person met with in their country not having entered in at either of those passes was considered a suspicious character, a spy, or enemy.

Popular Names.	Proper Names, with Remarks.

LYCOMING AND NORTHUMBERLAND.

Lycoming Creek. . . .	Legauíhane, *sandy creek* (which is also the true Indian name for this creek).
Monsey Creek.	Minsink, *the habitation of the Monseys.*
Pine Creek.	Cuweuhanne, *stream flowing through pine lands.*
Loyalsock Creek. . .	Lawi-sáquik, *middle creek, the stream which discharges itself between others.*
Nipanose.	Nipenowis signifies, *like unto the summer, warm situation.*
Mahoniety.	Mahontitti, *a very small lick* (*tit* is a diminutive).
Mahony Creek. . . .	Mahónhánne, *a stream flowing from a lick.*
Fishing Creek.	Namæshánne, *fish creek.*
Chilisquaque Creek. . .	Chililisuági, *the resort of snow birds*, or, *the favourite place of the snow birds.*
White Deer Creek. . .	Woaptuchhánne, *white deer creek*, or *the creek on which the white deer have been taken.*
Elk Creek.	Mòshanne, or mooshanne, *elk creek.*
Shamokin.	Shahamóki and Shahamókink is the manner in which the Indians pronounce this word. Some Indians have supposed the name of this place to be Schachaméki, which is *the place of eels;* and so would give the creek the name of Shachamekhanne, *eel's creek.*
. . . . .	Quenischáchachki. This word is much in use with the Indians who lived on the Susquehanna, it being the name for the "Long Reach," in the west branch, below the Big island.
Big Island.	Mèeheek, Menáthey, is their name for this island.

Popular Names.	Proper Names, with Remarks.

CENTRE, CLEARFIELD, POTTER AND M'KEAN.

Bald Eagle's Nest. . .	Wapallannewachschiéchey, *bald eagle's nest.*
Bald Eagle Creek. . . .	Wapallannewachschiechhanne, *the stream on which the bald eagle's nest is.* This is the true Indian name for that stream.
Beach Creek.	Schauweminschhanne, *beach creek.*
Little Mashanon. . . .	Tankimóshanne, *little elk creek.*
Osweya Creek.	Utscheia, *place of flies;* utschewak, *flies.*
Sinemahoning.	Achsinnimahoni, *stony lick.*
Elk Creek.	Moshanne, *elk creek.*
Elk Lick.	Môsa-mahoni, *elk lick.*
Kenzua Creek. . . . . Kenjua Creek.	Kentschuak, *they gobble* (namely, the wild turkeys); the gobbling reply which the turkey cock makes to the call of the hen. The place which bears the above name must have been a favourite place of the turkeys, and the creek called Kentschuwahanne, *turkey's gobbling creek.*
Cononoda.	Gunninada, *he makes a long stay there;* or, *it is a long time* since *he went thither.* Probably at this place they were impatiently waiting the return of one of their company; and so the place would remind them of the circumstance.
Chinkiclamoose. . . Chingle Clamoose.	Achtschingi clammo signifies, *it barely sticks together.* This place, west branch of the Susquehanna, derives its name from a certain short bend where the river turns short, back again, leaving a narrow strip of land between its courses which barely can prevent itself from tumbling down. Hence this name. See Hist. Trans. p. 191, for an interesting story relating to this spot.
. . . .	Pongus uteney, *the habitation of the sand fly or gnat,* the place being remarkable on account of these insects being there in such abundance or numbers that the traveller can have no rest for them. See Loskiel's History of the United Brethren, part 3, page 79.

Popular Names.	Proper Names, with Remarks.

WARREN, ERIE, AND CRAWFORD COUNTIES.

Conewango Creek. . .	Guneúnga, *they stay long, it is a long time since they have gone away (from us).*
Cunneyaut Creek. . . . Cunneaut.	Gunniáte, *it is a good while since we went.*

MERCER, VENANGO, AND JEFFERSON COUNTIES.

Mahoning.	Mahóni, *a lick;* mahónink, *at the lick.*
Pymatuning.	Pihmtónink, *the dwelling place of the man with the crooked mouth*, or *the crooked man's dwelling place.* (I knew this man perfectly well. J. H.)
Cool Spring.	Thuppeek, *a cold spring.*
Neshanok Creek. . . .	Nischhannók, *two adjoining streams.*
Slippery Rock.	Weschâchapuchka, *slippery rock* is the English of the word as it stands, and the name the place goes by with the Indians.
Wolf Creek.	Tummêink, *the wolf creek.*
Laekawanak.	Lechauhannek, *the forks of two streams.*
Paint Creek.	Wallámânink, *the place where paint is.*
Toby's Creek.	Gawunschhanne, *briar creek.*
Sandy Lick.	Légąuwi-Mahoni, *sandy lick.*
Little Briar Creek. . . .	Tankawunshhanne, *little briar creek.*

Popular Names.	Proper Names, with Remarks.

ARMSTRONG, BUTLER, AND BEAVER COUNTIES.

Kiskemanitas.	Gieschgumaníto, *make day light*, or *cause day light to be.* Thus said a warrior in the night to his comrades, he being impatient to be off from the spot they were at; whence the place has this name.
Cawanshanock. . . .	Gawunschhánne, *briar creek, green briar;* gawunschige, *briary,*
Kittaning.	Kithánne, *the superior, main stream;* gichthanne, the same, in the Monsey idiom.
Kigischgotum.	Kikischeótam, the insect we call *caty did.*
Buffalo Creek.	Sisilichánne, *buffalo creek, resort of the buffalo.*
Mohulbuctiton.	Mochólpakiton, *where we abandon our canoes,* or, in our language, *at the head or end of navigation,* where the stream will no more admit of navigating it.
Connequeness . . . . Connequenssi.	Ganachquenésink, *a long straight course.* This is the name of that stream.
Big Beaver River. . . .	Amóchkwi Sipu, *beaver river;* but the Indians generally call it "Kaskasksipu," from the town of "Kuskuschki." (Having been on it, I never once heard them call it "Beaver creek," though I lived on it two years. J. H.)
Little Beaver Creek. . .	Tankamóchque and Tankamockhánne. Both these names are proper, and signify *the small beaver stream* or *creek.*
Brushy Creek.	Achewek, *brushy, difficult to cross.*
Sakunk.	*The outlet* of the Big Beaver into the Ohio. This place for various reasons had in former times been well known by all the Indian tribes for a great distance, but in particular to their warriors. It was during the French war the general rendezvous of warriors, and whence, when equipped, they set off for war in different directions; it was the thoroughfare of all travellers, traders, &c., therefore also *the watching,* and in many instances *a murdering place.*
Racoon Creek. . . .	Nahenumhánne, *racoon creek.*

Popular Names.	Proper Names, with Remarks.

ALLEGANY COUNTY.

Pittsburg. . . . . Ménachkink. This name, by which all the Indians call the place, was given to it ever since the French built a fort there, and has been retained to the present time. The word ménachk implies *an enclosed spot of ground, a confined spot or place secured from being entered into, a fortification*: literally, *at the fort*.

Allegany. . . . . Alligéwi. The name of a race of Indians said to have once inhabited that country.

. . . . . Alligewinink. This word comprises all the country west of the Allegany mountains, together with all the large rivers therein and their tributary streams.

Ohio River. . . . . Although I have no objection to the name by which we call this river, yet for some reasons I cannot satisfy myself, that this word, consisting of no more than four letters, can be its *whole* and *proper* Indian name. I am therefore disposed to examine into the matter in my own way, and leave the reader to judge for himself. In doing this I ground my objections on the following facts:

First. That all the streams to which the Indians have given a name, such name is descriptive either of the stream itself, or something in or about it, which attracts their attention at the time, or which will at all times exist—as rocks, cataracts, ripples, remarkable islands, &c.

Secondly. That I do not ever recollect hearing the Indians among themselves call this river by that name.

Thirdly. Because I have so often witnessed how the white people, both French and English, drop a part of an Indian name in order to make it more convenient to them and easier of pronunciation.

Having heard it asserted by white people that the word "Ohio" signified "*the beautiful river*," while the Six Nations have at times called it the "*bloody river*." I became the more anxious to learn the truth, both by questioning intelligent Indians on the subject, and also by paying attention to their conversations when they had occasion to name this river.

That a word of only four letters should comprehend in itself "*the beautiful river*" or "*the bloody stream*," or the single word "*river*," I could not believe, neither did my inquiries

Popular Names.	Proper Names, with Remarks.

Ohio River.

serve to inform me to what Indian language the word *Ohio* belonged. When I listened to discourses of the Indians with the white people of that country, they on both sides would say "high O," and not Ohio, as we pronounce it, which evinced that something must be wrong or wanting in this word, to give it a meaning. And I followed their example in calling the river (Ohio) by the same name they did, which is Kithánne, or, as the Minseys call it, Gichthánne—either of these words signifying *the main*, *superior stream* in that part or country. We, indeed, have the word "Kittaning" on our maps for a particular spot on the Allegany river, whereas the true meaning of this word, which by the by should be written Kithannink, denotes *the river* itself. Kit from kitschi, *greatest, superior;* and hánne, which denotes *flowing water*, or *a stream of flowing water*. If then the river we call Allegany is by the Indians called Kithánne, *the main river* in that part of the country, and until it joins with another equally large river (the Monongahela) at Pittsburg, why, as the Indians, do we not continue the name downwards, where it is vastly larger?

But to give a well grounded opinion as to the cause of that river being called Ohio, and thus to show clearly the word or words from which it has derived this name, I will, in the first place, put down some Indian words which are to serve as guides in ascertaining the fact I am in search of, and am anxious to ascertain, though not with an intention to effect a change in the name we have adopted for that river, but to strengthen the position I have taken or the reasons I have given above: why *I* cannot admit that the word Ohio by itself is sufficient to designate such a remarkable river as this is, when by the by we have in the foregoing pages seen, how they (the Indians) notice even small and almost insignificant animals, by incorporating their names in the body of their compound words.

WORDS IN THE UNAMI.	WORDS IN THE MINSI DIALECT.
O'hui-Ohi, *very* (when prefixed).	Achwé, *very* (when prefixed).
O'pen, Opsit, *white.*	Wápen, Wápsit, *white.*
Opiéchen, *it looks white.*	Wapiechen, *it looks white.*
Opelechen, *white, bright, shining.*	Woapelechen, *white, bright, shining colour.*
Opeek, *white with froth (water).*	Wapeek, *white by froth (water).*
Ohiopéchen or ohiopiechen, *it is of a white colour.*	Wahewapīechen, *it is of a white colour.*

Popular Names.	Proper Names, with Remarks.

Ohio River.

WORDS IN THE UNAMI.

Ohĭopeek, *very white* (*caused by froth*, or *white caps*).

Ohĭôphanne, *very white stream.*

Ohĭopeekhanne, *very deep and white stream*, viz. by its being covered all over with white caps.

Ohiopehhele, the name of a place in the Monongahela, which in our maps is written *Ohiopyle*, signifies *white frothy water*, occasioned either by the water being disturbed by winds, or rushing over rocks or falls in the stream, &c.

WORDS IN THE MINSI DIALECT.

Achwiwapeek, *very white* (*by froth*, or *white caps*).

Achwiwôâphanne, *very white stream.*

Achwiwôâpèkhanne, *very deep and white stream*, viz. by its being covered all over with white caps.

Wahhellapehheue, same as *Ohiopehhele* in the *Unami.* (See the explanation on the other side.)

By the foregoing, it will be seen that my supposition with regard to the name given to that river has some foundation, and that the word, as it now stands, cannot be its *true* name, its *derivation* being here clearly set forth. I will now show by example what confirms the opinion I had with regard to the name given to this river, drawn from facts, while travelling with Indians both by land along its banks, and by navigating the same.

The Ohio river being in many places wide and deep, and so gentle that for many miles in some places no current is perceivable, the least wind blowing up the river covers the surface with what the people of that country call *white caps*; and I have myself witnessed that for days together this has been the case, caused by southwardly and south westerly winds (which by the by are the prevailing winds in that country), so that we navigating the canoes durst not venture to proceed, as these white caps would have filled and sunk our canoe in an instant.

Now in all such cases, when the river could not be navigated with canoes, nor even crossed with this kind of craft—when the whole surface of the water presented white foaming swells, the Indians would, as the case was at the time, apply one or other of the above quoted words to the state of the river; they would say "juh ohiopieehen,"—"ohiopeek ohiopeekpanne;" and when they supposed the water very deep they would say "kitschi ohiopeekhanne," which means "*verily this is a deep white river.*"

I now come to the other point, how it might have happened that the word in question came to be so abridged as to leave

Popular Names.	Proper Names, with Remarks.

Ohio River.

nothing whereby to judge of its signification. This may be accounted for from the following causes. The traders who penetrated into the Indian country for the purpose of trading with them, and the frontier settlers, are generally an ignorant set of people, who are careless with regard to matters that do not interest them; with them any word will do for a name, so that it bears something *similar* to the *true* one. Neither have they the "Indian ear" to hear properly, nor are they capable of pronouncing the gutturals so numerous in Indian languages, nor even inclined, perhaps, to keep in memory such long and strange words as the Indians have. I have frequently witnessed their dealings with the Indians, where the latter were kept in continual laughter at the odd and improper words these made use of. Now on the return of these traders into the settlements they became instructors to others; so that one catches a wrong word from the other; which is at once adopted, as being correct.

Another cause is, that the people who settle new countries have a custom of shortening names of places merely for convenience sake; I have found this the case even among the French Canadians, both at Detroit and at Post Vincennes, and Mr Volney found it so, likewise, when he travelled through that country. Thus, for instance, instead of saying I will go to Pittsburg, they say "I will go to Pitt." Youghiagany they call "Yough;" Detroit, "Troit;" Hackhacking, "Hácken;" Post Vincennes, "the Post;" Kaskaskias, "Kas;" Ohio, "Hio," &c. Our word Lehigh or Lecha has no signification, though, like Ohio, it has been shortened from the original word Lechauhanne.

Now might it not have been the case at some early day with the river Ohio, that instead of saying Ohiopekhanne they only took the first syllable of the word to name it by, which was giving it an easy name, both to pronounce and keep in memory?

I now leave the Ohio and go on with other names in Allegany county not yet explained, beginning with Monongahela.

Monongahela River. . . Menaugihilla, this word implies *high banks breaking off in some places and tumbling down.*

Turtle Creek. . . . . Túlpéwi Sípu, *turtle creek* (so called by them).

Pine Creek. . . . . Cuweŭhánne, *pine creek.*

Puckita. . . . . Pachgita, *throw it away, abandon it.*

Popular Names.	Proper Names, with Remarks.

WASHINGTON COUNTY.

Wheeling Creek. . . .	Wihlink, *the place of the head.* The Indians report. that a prisoner taken by them in one of their wars had there been put to death and his head stuck up on a sharpened pole.
Cross Creeks.	Wewúntschi Saquík. The words imply *two streams emptying themselves into a river directly opposite to each other;* as is here the case, where they empty into the Ohio; and both bear the same name.
Catfish Camp. . , . .	Wisamekink, *the place where the Indians named* Wisâmek (catfish) resided. This place was on or near where the town of Washington is built.

WESTMORELAND, FAYETTE, AND GREEN COUNTIES.

Kiskemanitas. . . . . Kiskaminetas.	Gieschgumaníto, *make day light, cause it to become day light.* (The circumstance which gave rise to this matter is already taken notice of under the head of Armstrong county.)
Loyalhannon Creek. . .	Lawêlhanne, *the middle branch* (*stream*).
Beaver Dam Creek. . .	Amochkpasink, *where the beavers have shut up the stream by making a dam across the creek.*
Yoxiogani. . . . . Youghiogeny.	Juhwiákhanné, *a stream running a contrary or indirect course.*
Ohiopyle.	Ohiopehelle. See page 369.
Red Stone Creek. . . .	Machkachsinhanne, *red stone creek;* or machkachsinnink, *at the place of the red stones.*
Manaltin.	Menāltink, *the place where we drank.*
Salt Lick Creek. . . .	Sīkhewi Mahoni; Sikheuhánne, *a stream flowing from a salt lick.*

Popular Names.	Proper Names, with Remarks.

INDIANA, SOMERSET, AND CAMBRIA COUNTIES.

Two Licks Creek. . . .	Nishahoni Sipu, *the stream at two licks.*
Crooked Creek. . . .	Woakhanne, *crooked stream* (*has great bends*).
Plumb Creek.	Sipuashánne Sipuasink, *the place of plumbs.*
Queen Mahon.	Cuwei mahóni, *pine trees' lick, a lick within a grove of pine trees.*
Stony Creek.	Sinnehanne or Achsinnehanne, *stony creek.*
Paint Creek.	Wallámink, *the place where the paint is.*
Black Lick Creek. . . .	Næskahoni, *black lick.*
Little Canemaugh. . . .	Tangamóchki, *little otter creek.*

HUNTINGTON AND BEDFORD COUNTIES.

Juniata River.	This is an Iroquois word. The Delawares pronounce it Juch or Chuchniada. The Iroquois had a path leading directly to a settlement, or body of Shawanese, hunting and remaining here for some time: I believe their residence has been where Bedford now stands. The Indians say that Juniata river hath the best hunting ground for deer, elk, also for beaver, &c.
Big Tooth Creek. . . .	Mangipitink, *the place of the large tooth.*
Standing Stone. . . .	Achsinnink. This is the proper Indian name for this place. The word denotes a large rock which stands separate from others, or where there is none other nigh. I know four places within five hundred miles which bear this name for the same reason, two of those rocks are very large and high, and stand in the river. For similar reasons, but where such rock is of an inferior size, they say achsinnissink, *the standing small rock.*

Popular Names.	Proper Names, with Remarks.

FRANKLIN, CUMBERLAND AND MIFFLIN COUNTIES.

Conococheague. . . .	Guneukìtschik, *long indeed, very long indeed.* This word appears to refer to some cause which gave rise to the Indians becoming impatient.
Conodoguinits. . . . . Conedogwinet.	Gunipduckhannid, *for a long way continual bends.*
Yellow Breeches Creek. .	Callapatschink, *where it turns back again* (alluding to a particular place in the creek).
Buffalo Creek.	Sisiliehanne, *buffalo creek.*
Kischìcoquílis.	Gischachgokwalìs, *the snakes have all got into their dens.* Made from the words "gìschi," *already;* "achgook," *snake;* "walieu," *in holes, dens.*
Mehantango.	Meschantange, *where we killed deer.*
Achwick Creek. . . .	Achweek or aeheweek, *brushy, difficult to pass.*

DAUPHIN, ADAMS, AND YORK COUNTIES.

Wikinisky Creek. . . . Canewago.	Wikenkniskeu, *wet and dirty house, camp, lodging place.*
Quitapahilla.	Cuîtpehelle or cuwitpéhella, *a spring or stream issuing out of the earth, where pine trees are standing.*
Manahan.	Menéhend, *where liquor was drunk.*
Manady.	Menáthey, *an island.*
Manaltin.	Menâltink, *where we met, assembled.*
Pextang. . . . . Paxton (now).	Peékstunk, *the standing* or *dead water; a deep* or *stagnant spot of water in a stream, a pool,* &c.

Popular Names.	Proper Names, with Remarks.

LANCASTER COUNTY.

Conestogo.	This is an Iroquois word, or of the Six Nations.
Cocallico Creek. . . .	Achgòòkwalíco, or shortly, Chgokalico, is a place *where the snakes gather together in holes or dens*, or *snakes' winter quarters.* I have frequently heard the Indians who inhabit this country speak of the place.
Pequea Creek.	Picueu, the name of one of the four Shawanese tribes, who were (or some families of them) settled here for a time when they enjoyed the protection of the Delawares.
Chikisalungo Creek. . .	Chikiswalungo, *the place where the crabs or crawfish burrow* or *make for themselves holes in the ground*; or *the place where the ground is full of holes, made by crawfish or crabs.*
Tucquan.	Pducquan, *round*; pduckachtin, *a round hill.*
. . . . .	Pduchane, *a winding stream.*
Cunoy.	Gunéu, *long, it is long.*
Conewago.	Guneuagi, *a long stripe of land.*
Octorara.	This is probably an Iroquois word.

Pennsylvania they call Quækelinínk, which signifies *the country of quakers*, or *the quaker country.*

INDIAN NAMES OF RIVERS, CREEKS, &c. IN NEW JERSEY, FROM MAPS.

Popular Names.	Proper Names, with Remarks.
Wantage.	Wundachquí, or undachquí, *that way.*
. . . . .	Cuweuagí, or cuweuachgí, *pine timbered land.*
Walpack.	Walpeek, *a turn hole, a deep and still place in a stream.*
Tappan.	Thuphāne, *cold stream issuing from springs.*
Hoboken.	Hopokau, *a tobacco pipe.* The Delawares have frequently spoken of this place as being not far from the city of New York.
Hackensack. . . .	Hackinksáquĭk, *the stream which discharges itself into another, on low level ground; that which unites itself with other water almost imperceptibly.*
Pasaic River.	Pasaic or Pasáiĕk, *a valley.* It does not seem that the Indians noted the falls in this river; but merely the ground through which the stream passeth.
Pegunock River. . . .	Pekhánne is *dark river.* Either this river must have derived its name from the thickness of the trees which stood on its banks, or they (the natives) arrived at the river to encamp after dark.
Whippany Creek. . . .	Wiphanne, *arrow creek, where the wood or willow grows of which arrows are made.*
Makiapier Pond. . . .	Machkiabi, *water of a reddish colour.*
Bomopack (perhaps). . .	Wulumopeck, *round pond* or *lake;* or lomowopek, *white on the inside.*
Pompton.	Pihmtom, *crooked mouthed.*
Totawa Falls.	Totauwéi, *to sink, dive, going under water by pressure,* or *forced under by weight of the water.*

Popular Names.	Proper Names, with Remarks.
Achquakennna. . . . . Acquakenunk.	Tachquahacanména, *where blocks* (for pounding corn) *are made by us*, or *the place from which we get the wood we make our pounding blocks of*, namely, *the gum tree*, which they call tachquaheaniminschi.
Muscomecon.	Maskhannecunk, *rapid running stream.* It is a Monsey word.
Piscataway.	Pisgattauwí, *it is getting dark.* Same name in Pennsylvania, New Hampshire, &c.
Wisconk River. . . .	Wîsquonk, *the elbow.*
. . .	Wîsquon, *a twist of tobacco, yarn* or *any thing that may be twisted.*
Suspecough.	Sīspeekeh or Sispeek, *muddy, dirty water; muddy pool* or *pond; muddy stream.*
Amboy.	Emboli. So called by the Indians who dwelt there. When they speak of this place they say "Embolink." This Indian name implies *hollow in the inside.* They say "embolhallòl," *hollow it out.* Embolhican is the name of a roundish adze, to work out bowls, canoes, wooden shovels, &c. I was formerly, for upwards of twenty years together, acquainted with a venerable and trusty Indian, who had been born at that place, and who, when he died in 1780, was believed to be upwards of one hundred years old. He told me that the place, resembling something like a bowl, lying low and surrounded with higher grounds, was therefore called Emboli.
Chyoes Island.	The Indians call the place where the town of Burlington stands, Tschichohacki, which means *ancient cultivated land*, or *the oldest planted ground;* they say that here was built their first town on the river. There did, however, in later years live an Indian on the spot named Schígo, which means *widower;* and Proud is also correct in saying that this place (and the country down the Delaware) was inhabited by a tribe of the Delawares called "Mandas;" but, according to some Indians who were of this tribe, they had a hundred years ago incorporated themselves with the other branches, the Unamis and Unalachtígo. See Proud's History of Pennsylvania, vol. i. p. 144.

INDIAN NAMES OF RIVERS, CREEKS, &c. IN MARYLAND.

Popular Names.	Proper Names, with Remarks.
Shenandoah River. . .	Schindhandówi. This is the proper name for that river. I was told so by White, the Nanticoke chief, who was born in Maryland. The word is true Delaware; yet, more properly written, it should be Schindhandowik. The word signifies, *the spruey stream, a stream passing by spruce pines*, which probably are or were at some place or other on the banks of this river. I should write the word Shinshandóweek, to adapt it to the English pronunciation.
Mesongo Creek. . . .	Meschánge, *where we killed the deer, a good place for killing deer.*
Aquia Creek.	Equíi or Equíwi, *in, between (something).*
Quentico.	Gentica or Kéntika, *a dancing, frolicking place.*
Corapeehen.	Colapéchen, *fine running stream.*
Opieon River.	Opíquon and Achpíquon, *a flute*, or any other musical instrument; Opèkhan, *stream of a whitish colour.*
. . . .	Hopíquon, *a rib;* also *the fore shoulder of a four footed animal.*
Pokomoka River. . . .	Pocqueumóke, *place of shell fish, clams*, &c.
Potowmak River. . . .	Pedhámmòk, *they are coming (by water):* so the Indians have told me.
Monoeassy Creek. . . .	Menágassi, *a stream having several large bends.* (See the same word in Northampton county, Pennsylvania.)
Occoquan River. . . .	Okhúcquan, Woàkhúequoan, (short) Húequan. All these words signify *a hook*, whether it be a pot hook or a piece of iron or other metal, bent in that form.

Popular Names.	Proper Names, with Remarks.
Conecocheague. . . .	This is already explained under the head of Cumberland county, Pennsylvania.
Petapsco River. . . .	Petâpsqui, *bank* or *tide water, causing a froth*, the word tquí meaning *waves* or *swells, caused by winds* or *other force.*
Sassafras River. . . .	Winâkhánne, *sassafras stream.*
Piccowaxen.	Picowaxen or pikuwáxen, *torn shoes, shoes with holes;* pixu, *it is torn.*
Senegar Creek.	Sinníke, *stony;* shinnikhánne, *stony creek.*
Senegar Falls.	Sinnipehella, *water rushing over rocks* or *stones.*
Piscataway.	Pisgattawi, *it is getting dark.* (See the same name in Pennsylvania and New Jersey.) There is also a river of this name in New Hampshire.
Aquakik.	Achewekīk, *very brushy, a thicket, difficult to pass.* (See the same name in Pennsylvania.)
Pamunky Creek. . . .	Pihmunga, *where we took a sweat;* namely, *where we were sweating ourselves* (*in the sweat oven*).
Wicomico.	Wikhamíku, *where the houses are building.* (See the same name in Pennsylvania.)
Queponco Creek. . . .	Cuweupúngo, *pine wood ashes.* Probably they had no other ashes for baking their bread than that of the pine wood.
Manokin River. . . .	Menachkink, *an enclosed place, a field, fort,* &c. Probably a fort had been built on this river at an early day, or an enclosure made. (See Pittsburg.)
Aquasquit Creek. . . .	Achqwásquit, ĕhowasquît, *grassy, overgrown with grass* (as generally old towns are).
Magotty River.	Megúkty, *a small plain* or *prairie* (probably on a river).
Chiknicomika.	Tschikenumíke, *the place of turkeys, where the turkeys are plenty.*
Tuckahoe Creek. . . .	Tucháchowe, *deer are shy, difficult to come at;* also, tuchauchsóak, *the place where the deer are very shy.*

Popular Names.	Proper Names, with Remarks.
Nantikoke River. . . .	Neehtícôk, Neehteókink, *the place of the Nanticokes* (where they had their settlements).
Wilipquin Creek. . . .	Wihlipquin, *the place of interment of sculls* (*and bones*). These people had the custom of collecting the sculls and bones of their dead, and burying them in caverns or holes dug in the ground, all together.
Chesapeake Bay. . . .	Tschsichwapéke, or more fully written, Ktschischwapéeki, from kitschi schwapeek, *a superior* or *greater saltish bay*; the syllable *peek* signifying *a bay, lake, basin*, or *deep water without any visible current*. But to shorten the word, they say k'tschischwapeke, the first letter, k, scarcely to be heard. The guttural *chw* is in our English word omitted.

INDIAN NAMES* OF RIVERS, PERSONS, &c. IN VIRGINIA.

Powhatan.	It appears that this Indian chief bore the same name as the river now called James river; if so, the river must have been called Powhathanne, which would signify *the river of pregnancy, fruitfulness, the fruitful river.*
Nansemond.	Neunschimend (German pronunciation), *the place where we fled, had to fly for it, were driven off from.*
Kiquotan.	Kiguatank or Kigeŭétank, *a person that heals*, or *where the sick are cured.* This place seems to have been a small settlement, where probably a physician resided.
Arrahattuk.	Allahátték, *empty, all gone, there is no more of it.* Probably meaning some article that was sold off, or the rum bottle or keg empty.
Pocohantas. . . . . Pocohontas.	Pocohántes or Pockohántès means *a run between two hills.* Pockowáhne is *a creek between two hills;* Pochohánne is the

* These names, taken from an early written history of Virginia, will show that the people we call Delawares were at the time the English arrived there in full possession of that country, as they themselves say was the case.—J. H.

Popular Names.	Proper Names, with Remarks.
Pocohantas.	same in the Unami idiom. The termination *tes* denotes *a run* only, not *a creek* or *large stream;* so that hántes is a diminutive of "hanne," *a river, creek* or *stream.*
Chickahominy.	Chickamahóny (English pronunciation). The word signifies *turkey lick.* Tschikenumahóni (German), *a place resorted to by turkeys.* I know several places bearing this name on account of turkeys coming to the lick to drink.
Uttamaccomak.	Uchtamaganât means *a path maker, a leader, a warrior ;* w'tamaganat, *a chieftain, a leader of a band.*
Oppechaneanough. . .	Opeekhánneu, *a stream of water of a whitish colour;* or hóppechkhanne, *rain worm stream;* huppeechk means a particular insect which the Indians call a *rain worm.*
Tomahawk.	Tamahican is the Delaware word for a *hatchet* or an *axe.*
Nemattanow.	Nemattínna. This word means *our brother Nimattinna* (an Indian war chief).
Oaksuskie River. . . .	Woâkassisku. This word implies, *winding, marshy grounds, boggy swamps* (full of broad sunken ground and marshes).
Accomack Bay.	Achgamêk means *broad still water, broad bay.*
Poccosen River (probably).	Pduckassin, *the place of balls, bullets, lead.*
Pamunky River. . . .	Pihmunga, *the place of sweating.*
Mattapony River. . . .	Mattachpona, *no bread at all;* matschachpona, *bad bread.*
Wicocomico River. . .	Wikhachkoméko, *where they are building houses,* or *yonder where they are building.*
Pocomoke River. . . .	Pockhammókîk, *knobby, broken with knobs, hills.*
Chissenessick River. . .	Chuessenesik (English), Tschuîssenetschîk (German), *the place of blue birds, the harbouring place of the blue bird.*
Pungoteque River. . . .	This word perhaps means, *where powder is to be had;* yet as the single word *pung* signifies *dust, ashes, powder,* even *sand,* it may be applied to any thing dusty, and so mean *a sandy place,* or *where ashes are collected.* The *great sand fly* is called Púngus.

Popular Names.	Proper Names, with Remarks.
Powcoranie.	*Altar stone.*
Monacan Town. . . .	Mônhacan, *a spade;* also any instrument made use of to dig up the ground.
Wasebur, *an herb.* . . .	Weschábûck, *physic that works downwards, cathartic.*
Chapacour, *a root.* . . .	Tschâppichk, *medicine prepared from plants,* &c.; tschuppik, *a root.*
Tangomockonomingo. .	Tangamochkomenunga. The author interprets this: *they came from little beaver creek.* He probably mistook the meaning, which must have been, *that a bark for medicine had been brought from* Tangamochke, *little beaver creek.* Mennnga means *bark.*
Macock.	Metz-hack means, *eatable hard shelled fruit.* The syllable *metzin* (*eating*) and *hack* for a *hard rind* or *shell.* Hackhack is their name for the *ground.* Every different kind of pumpkin squashes has a particular or distinguishing name. The general name is gescandhakall for any *eatable pumpkins* or *squashes*, which means, those kinds of fruits of this description whose rind or shell becomes soft by boiling. It is the Indian name for all kinds of *melopepones*, and the lesser kind of *pompions* or *cashaw.* The Indians in Canada make boxes of the tough strong bark of the birch and elm trees to pack their maple sugar in, which they call "mococks."
Moccasin. . . , . .	Maxen or macksen is the name for Indian shoes.
Huscanawpen.	This word, which I well understood, is hus-ca-len-naw-pa-i. I have heard the Indians sing it at their festival dances; and understood it as expressing the words, husca n'lenapewia, *indeed I am an Indian*, in the sense that he or they were pure and not degraded from their origin. They have also other long words, which they sang off, but which I never could perfectly understand.
Wigwang.	Wīquôâm (English pronunciation, weekwam), *a house.*
Matchacomoco.	Matachgenimoak, *they are counselling about war, holding a council of war.*
Werauwance.	Iláwi, *a war chief;* wajauwi (Monsey dialect), *a military officer, a chief.*

Popular Names.	Proper Names, with Remarks.
Wisoccan. Wighsacan. Woughsacan.	Thus the author says that the Indians call their physic or medicine generally; but in this he is greatly mistaken. The word "wisoccan," or more properly wisachcan, signifies *bitter, sharp to the palate; any thing that has a sharp, bitter taste:* and it has numerous derivatives; thus, wisachgim is the name for *sour grapes;* wisachgank, for *rum, brandy.* (Bitter enough, to be sure!)
Winank.	Wínâk, or winaak, *the sassafras tree.*
Matomkin.	Mattemikin, *to enter into a house.*
Gingoteque.	Schinghatteke, *he does not want it, despises it.*
Kiequotank.	Kiwīkquotank, *a visitor, one who pays visits.*
Matchopungo.	Machtschipungo, *bad powder,* or *bad ashes.*
Occohanock.	Okehanne, Wòâkehanne, *crooked, winding stream.*
Oanancock.	Auwannáku, *foggy.*
Chiconesse.	Tschiconesink, *where it was forcibly taken away.*
Wyanoke.	Wigunaka, *the point of an island.*
Gangascoe.	Shingascui, *level and boggy, level, wet and grassy (ground).*
Menheering.	Mênhattink, Menachtink, (Monsey) *on the island.*
Rappahannok.	Lappihánne, *the current has returned,* or *flows again, a place where it ebbs and flows;* lappahanink, *at the place where the tide water comes, where water comes and runs off again.*

NAMES OF DELAWARE CHIEFS AND OTHER NOTED CHARACTERS OF THIS NATION, SINCE THE ARRIVAL OF WILLIAM PENN, TOGETHER WITH THE SIGNIFICATION OF SOME OF THE NAMES HERE PRESENTED, AND SHORT BIOGRAPHICAL SKETCHES.

Popular Names.	Proper Names, with Remarks.
Idquahon. I-anottowï. Idquoquekon.	These are called in ancient deeds "sachamakers," which word appears to be intended for *chiefs*, whom the Delawares call "sakima," but Europeans generally call them "sachems."
Temanen.	Probably Temenend, *the affable.*
Metamequon.	Mattemikgûn, *he that has entered* (*a house*).
Maykeeriek-Kisksho.	Machéli-gischguall, *many days* (Swedish Delaware).
Okanickon.	Okanican and Wöakenican, *an iron hook, pot hook.* This chief died at Burlington about the year 1681. (Smith's History.)
Sheoppy.	Schiwachpí, *tired of staying* (*in a place*), or Schéyachbi, *along the water's edge or sea shore.*
Jakkursoe.	Acheölsoët. *one who takes care of a thing, a preserver.* This chief is well known to me by hearing of the Indians; he had for some years been intrusted with the wampum speeches and papers from government respecting national affairs.
Tattamy, generally called King Tattamy.	Tadámy (English pronunciation), Tadémy (German). This man was for many years the principal chief in the Forks of Delaware, and resided on the Nazareth tract, at the town called Welakamika, when the brethren, through count Zinzendorf, purchased the manor. He was friendly to all white people, and therefore in their esteem, particularly so with the brethren, who invited him to remain as long as he chose to stay on the land, and be their neighbour; but such was the wickedness of some people that came and settled in the parts, that a young Irishman with a gun meeting him on the road, shot him dead.

Popular Names.	Proper Names, with Remarks.
Agushuwa.	Echgúshuwe, a great chief of the Monsey tribe.
Weekwely, or Wekahelah (*Proud's History of Pennsylvania*). Weekquehela (*Smith's History of New Jersey*).	Wequéhella (English pronunciation), Wiquíhilla (German pronunciation). This word means, *to be fatigued.* The chief so named, in consequence of his having shot and killed a white man, named Leonard, was hanged in the year 1728, near Shrewsbury. The nation deplored the loss of this chief, believing him to have been too good a man to commit the act wilfully.

SUSQUEHANNA CHIEFS AND COUNSELLORS.

Olumapies.	Olumapîsid, *we tied, well bundled up.*
Lingehanoak.	Linquechinoak, *they look stedfastly* (*at some objeet*), from "linquechìn," *to look, to behold*).
Kelly-macquon. . . .	Chelík-mekgun, *you received much, you were well rewarded.*
Quitieyquont.	Quitiéquond, *one who commands silence;* also, *one who reproves, reprimands.*
Pishqueton. . . . . Pisquetumen.	Pisguwitamend, *he who keeps on, though it is getting dark.* On accounnt of this man's perseverance when sent with a message by his chief, or the council.
Nenachyhaut. . . .	Nenatschíhât, *a guard, watchman.*

FORKS OF DELAWARE CHIEFS, &c.

Popular Names.	Proper Names, with Remarks.
Toweghkappy, called by the white people Cornelius Spring.	Tawîkachpi, *he is not in the house.*
Sassoonan.	Schêssuna (English pronunciation, shassuna), *our uncle.* The Indians sometimes give such names as *uncle, brother in law,* to aged people, as a mark of respect.
Lawyequohwon. . . .	Lawiequáham, *in the middle of the house.*
Nutimus.	Nütamæs, *a striker of fish with a spear.* This man was called Isaac by the whites.
Pokehais.	Pockeháis, *a knob of a hill.*
Metaschechay.	Mètachschiéchey, *he who is now building nests:* alluding to the time when the birds generally begin to build their nests. The Indian here so named was a great character among his people, and was at the treaty held in September 1718 at Conestogo.
Ayyamaikan.	Ajamaikend, *he who claims something,* or *takes something away as his own property.*
Ghettypenceman. . . .	Gettyplensemaan, *he who speaks some French,* or *he who is becoming a Frenchman;* alluding to his understanding the language in part. They not having the letters *f* and *r* in their language, say "Plensemaan," for *Frenchman.*
Opekaset.	Opèkhásit, *it* or *he is made white, whitened.*
Pepawmaman.	Pepommáhemen, *to go by water in a craft, canoe.*
Aweaykomon.	Achwiáchgeman, *hard at planting* (*corn,* &c.).

Popular Names.	Proper Names, with Remarks.
Tussoigheenan.	Taschawikhénan, *he will not build a house so soon, is not in a hurry about building himself a house.*
Neeshaloppih.	Nischálaehpi, *there are two together (within).*
Monokykickan.	Monachkhican, *an instrument for digging the ground—pick-axe, grubbing hoe, spade,* &c.
Lappawinzoe.	Lapawinsoe, *he is gone again, gathering nuts, corn,* or *any thing eatable.*
Nutimus, called Pontius by the white people, was brother to the chief of the same name.	Nútamæs, *a striker of fish with the spear;* generally called Pontius Nutamæs—an excellent man, who never drank liquor, was born on Delaware where Philadelphia now stands; removed to the Ohio between the year 1742 and 1750; died on Muskingum in 1780, at the age of near one hundred years.
Taughhaughsey. . . .	Táchquatschi, *to feel cold, shiver with cold.*
Teedyusking. . . . . Tedeuskung.	Tadeúskund, a noted Delaware chief in the Forks, was burnt up in his house at Wyoming in the spring of the year 1763. For a sketch of his life, see Heckewelder's Account of Indian Nations, chapter 40, page 300.
Loquis. . . . . William Loquis.	Loquís (afterwards named Joseph Pepee) spoke very good English—had been a member of Mr Brainard's congregation—was sent, during the war of 1756, by the governor of Pennsylvania, with a message to the enemy; after the peace he joined the Christian Indians—lived with them at Shesehequon, on Susquehanna, and afterwards on Muskingum; died on the Miami about the year 1782, being upwards of ninety years old.
Shicalamy. . . . . Shickcalamy. (*Colden's History of the Five Nations.*)	Shikéllimus (Loskiel). This noted man was properly a Cayuga (Six Nations) chief—resided for many years at Shamokin, during which time much of the business between the Six Nations and the government of Pennsylvania was transacted with him; he was the father of the noted Indian chief, Logan, who sent the remarkable speech to Lord Dunmore, as stated in Jefferson's Notes of Virginia; he rendered many services to the United Brethren when on their missionary journeys to the Indians. (See Loskiel's History of the Mission for a sketch of his character, &c., part 2, pages 31, 109, 120.) He died in 1749. It was said that Logan's mother was a Shawanese.

Popular Names.	Proper Names, with Remarks.
Paksinous. . . . . Paxnous.	Paxnous, a chief of the Shawnese, on the Susquehanna, a great friend of the Brethren; rendered them services. See Loskiel's History, part 2, page 164.

WAR CHIEFS AND COUNSELLORS.

Tasucamin.	Tasúekamend, *he who never blackens himself.*
Cushawmekwy. . . .	Gischaméke, *ready to go* (meaning, *ready to go to war*), *packed, bundled up*, &c.
Kehkehnopaltin. . . . Keyheynapolin.	Giehkenópalât, *a great warrior, one who is expert in war.* The word is Minsi.
Macomal.	Micómil, *remind me, put me in mind.*
Wachaocautaut. . . .	Wachwalgetóchtant, *the lover of eggs, the longer for eggs.* This was his true name.
Captain Peter.	Indian name unknown to me.
John Hickman.	Indian name unknown to me. He was an interpreter.
Kekeuskung. . . . . Captain Ball.	Kigeúskund, *the healer, one who cures wounds, bruises*, &c. He was accounted a great warrior, and has ever been known to join parties of the Six Nations against the Cherokees. I saw him in November 1762, on the Allegany mountains, on his return from war against that nation; he was of the Monsey tribe.
. . . .	Newalike and Nihmha had been chiefs of the Monsey tribe at Minisink, afterwards on the Susquehanna, and finally at Sandusky.
. . . .	Allemewi and Gendaskund were Monsey chiefs on the Allegany river.
. . . .	Nihmha, a Monsey chief, born at Minisink, on Delaware: afterwards a chief on the Susquehanna and on Ohio.

Popular Names.	Proper Names, with Remarks.
. . . .	Weschnass, a Monsey war chief from Susquehanna.
Nedowaway.	Netawátwees. This chief had been a signer to the treaty held with the Indians at Conestogo in the year 1718. He was then a young man, between twenty and thirty years of age. Being, however, by lineal descent a candidate for the chiefdom of the first tribe in the nation (the Turtle), and of course one day to be placed at the head of the whole, he was instructed accordingly, and had the care of all verbal speeches with wampum, bead vouchers and such as were given in writing from William Penn's time down to the time he and many others left the Atlantic states, in consequence of their land being taken away from them, and as they thought unjustly, especially by the *long walk*, by which they were so abominably cheated of their lands. Having arrived in the Ohio country, he found numbers of his nation who had fled thither from the Atlantic settlements, and on account of the white people encroaching on them so fast, and dispossessing them of their choice situations, and foreseeing, that, ere long, cruel wars would be carried on between the combined Indian nations and the English, and that the former would be joined by the French, he chose to settle with his people by himself in a remote part of that country, where he could consult with the most powerful body of the enemy, the northern Indians and the French, and occasionally, when required, give advice to his (hostile) nation. His first step was to enter into a covenant with the Wyandots, and see that the country which the Delawares had *partially* evacuated some centuries before, should be restored to them; all which was complied with, to his wishes. By advice of the Wyandot chiefs, he for the present settled on the Cayahaga river, where he still resided in the year 1782, when I was in that country, leaving the rivers Muskingum and Big Beaver open for any of his nation that were there already, and should afterwards come to settle there; wherefore the Turkey tribe, under their chief, Tamaque, alias King Beaver, settled and built a town at the mouth of Nemoschili Creek, since called Tuscarawas. When, in the year 1763, the two English armies, the one commanded by colonel Bouquet, and the other, by way of lake Erie, commanded by colonel Bradstreet, were coming into the Indian country to compel the Indian nations by force of arms to a peace, this chief was much alarmed; being, where he was situated, within the reach of the latter, and flying across the ridge which divides the waters of the lake from those of the Ohio, in order to run down the Muskingum in a canoe, and so escape both armies, he was discovered by some of

Popular Names.	Proper Names, with Remarks.
Nedowaway.	colonel Bouquet's Indian spies and forcibly brought into the camp, where the colonel, in consequence of his not attending to the message he had sent him, to come into his camp to a council for peace, publicly deposed him, placing another chief in his stead. The peace being concluded between the English and the Indians, and colonel Bouquet again out of their country, the first act of the Delaware nation was formally to reinstate this their deposed chief to his former station, vesting him with all the necessary powers; in which station he remained until his death, in the autumn of the year 1776, being then near ninety years of age. It was with this chief that I saw at different times the speeches of William Penn and his successors; which speeches, whenever brought to view, caused animation to all present. Of William Penn, whom he personally had known, he spoke respectfully. It was the falling off or *decrease* of his nation, since the white people had come into the country, that caused him pain, and made him fear the future. Yet in the latter years of his life he felt somewhat comforted, finding they were fast approaching towards Christianity; hoping that by this they might prosper, he did his utmost to encourage his people to receive the gospel and join the Christian Indians then in their country.
Nutumus. (Isaac.) . .	(Properly) Nútamæs (see page 386, for the signification of the word), had also in early years been a counsellor and signer of treaties, while he resided on the rivers Delaware and Susquehanna, and for the same cause as their chief removed with his brother Pontius to the Ohio. Both of these brothers were amiable men, and beloved by all white people who knew them, and who had therefore given them the names they went by. Isaac having a mechanical turn, soon learned the use of tools, and became a tolerably good blacksmith, which profession he followed until his death; first at Shamokin, and then on the Muskingum, delighted with the handsome corn hoes, hatchets and other articles made by his own hands. He generally built himself a house at some distance from the village where he resided; he would put his planting grounds under good fence and plant fruit trees near the house, preferring manual labour to that of legislating. He and his brother died about the year 1780.
Lawelochwelend. . . .	This name means *one who walks between two others*, or *the middle person of three that walk abreast*. He who bore it was born on or near the spot on which the town of Philadelphia stands; he was, at the time when the first house was

Popular Names.	Proper Names, with Remarks.
Lawelochwelend.	built there, a lad of about twelve or thirteen years. He caught fish and rabbits, and shot ducks, pheasants, &c. for the workmen, which he brought to a woman that cooked for them, and kept a huckster's shop, or had trifling articles for sale, who in exchange gave him such things as needles, thread, scissors, knives, awl blades, &c. for his mother. After he was grown up, he, with many others, went to the Ohio country for the sake of hunting and trapping for beavers, otters, &c., visiting the place of his nativity several times, until at length he was made a chief in that country, and settled his abode at the Mahony Town, on the path that leads to Cayahaga. About 1773, while on his journey to the White river (an arm of the Wabash), for the purpose of trapping beaver (being considered a master in that art), he, on passing through the Christian Indian village at Schœnbrunn, on the Muskingum, took the resolution of resigning his station of chief and joining that society, which having done, he became a worthy member, and died at Lichtenau, in 1779, much regretted on account of his Christian-like conduct, which had served as an example to others. His age must have been about ninety years.
Welapachtsciéchen. Captain Jones.	This word implies, *standing in an erect posture*, or *set up straight against any thing that can support and prevent from falling*. This chieftain was of the Turkey tribe, and resided on Hockhocking, at Achsinnink (the standing rock). He was a tall and well looking man, and on account of his gentleness and affability, beloved by all who knew him. Indeed his benevolence and hospitality extended to all who came in his way, of whatever colour they might be. He had married a prisoner woman, brought in during the French war, by whom he had three children, one son and two daughters, whom he brought with him when he joined the Christian Indian congregation in the year 1776. He ever had been adverse to wars and bloodshed, and walked a godly life unto the end. He was one of those who were murdered by Williamson's party on the Muskingum in the year 1782. His children are now respectable members of the society at Fairfield, Upper Canada. On his baptism he was named Israel. See Loskiel's History, part 3, pp. 112, 130, &c.
Wewundochwalend.	This name signifies, *a person going on important messages* or *errands*. He was a great war chief during the French war, and in peace a councillor. He had the figure of a water lizard tatooed on his under lip and chin, for which reason he was called Tweegachschasu. See Heckewelder's Account of Indian Nations, in Hist. Trans., page 193.

Popular Names.	Proper Names, with Remarks.
Buckengilla, so called by the white people.	Pachgantschühillas means *a fulfiller, one who succeeds in all that he undertakes.* He was a son of the above named chief, and head warrior of all those Delawares who lived on the Miami and White rivers. He was resolute and brave, yet not cruel; he reasoned as a man of sense, and decided promptly: in all cases endeavouring to do justice where the case would admit of it. See Heckewelder's Narrative of the Mission, page 215, &c.
Tatabukska, so called by the white people, alias the Glaze King.	Tetepáchksí was for a number of years a councillor of the great council of the Turtle tribe at Goshachking (forks of the Muskingum); afterwards he became a chief of the Delawares who resided on the White river. He was rather timorous, and easily prompted to become jealous or mistrustful, though he meant no harm to any body, and rather than make a mistake, would leave others to act in his stead. Yet, harmless and innocent as he was, he was by the prophet Tecumseh declared a *witch*, and condemned to die; in consequence of which sentence, his executioners took him to the distance of eight or ten miles from their village, and there tomahawked him, and then burnt his body on the pile. See Heckewelder's Narrative of the Mission, page 410.
Captain White Eyes, so called by the white people. In Post's Journal of 1758 he is called Cochquacaukéhlton; in other places his name is written Kuckquetacton.	Coquethagéchton was his proper name. This man, though small of stature, was one of the *bravest* and *best* men the Delaware Indian nation ever had. As a war chief, though valiant when engaged with his enemy, he had never been charged with cruelty. As a councillor, he acted with prudence, and was not presumptuous. He was sensible, generous and hospitable to all who needed it, sincere in friendship, resolute and bold in counteracting the artifices of intriguers, and in putting down usurpers. Having been for a long time first counsellor to the great chief Netawatwees, who died in the year 1776, he now became chief in his stead, or at least accepted the appointment for a limited time, and until the young chief by lineal descent should be of proper age to superintend the councils. Having had previously, for a number of years, an opportunity of witnessing the progress the Christian Indians were making towards civilization, he considered his nation in a fair way of becoming a civilized people, and calculated on the return of peace as the proper time for making a beginning towards it, in which project he was encouraged by the then Indian agent colonel George Morgan of Princeton, New Jersey; but he did not live to see that time, for while accompanying general Mackintosh with

Popular Names.	Proper Names, with Remarks.

Captain White Eyes.

his army to the Muskingum, in the year 1778 or 1779, he took the small pox and died. The nation felt the loss of this chief severely, and notified it to all the surrounding nations and tribes, who, of course, in due time, either by speeches and strings of wampum, or in person, condoled with the nation on the occasion, as they had done on learning the death of his predecessor, Netawatwees, some years before. White Eyes had been the prop of the nation generally. Through his death a division took place at the instigation of political enemies. See Heckewelder's Account of the Indians, in Hist. Trans., pp. 139, 275.

Killbuck, jun., so called by the white people, who had formerly given his father this name.

Gelelémend was his proper name. The word means, *he who takes the lead*, or *the leader*. Although this Indian was not in a direct line entitled to the chiefdom, yet on account of his having for many years been a councillor of the Turtle tribe, and also in consequence of the legal heir to the dignity of chief being yet too young to fill this station, he was installed as temporary chief of the nation after the decease of captain White Eyes, and, as his predecessors had done, he endeavoured to keep the nation at peace, promising himself happy times when civilization should have taken place; to effect which, he was told, time after time, by the Indian agents and commanding officers at Pittsburg, that on a general peace taking place, the American government would aid and assist them. Notwithstanding all the measures this chief took to preserve peace, the adverse party, headed by captain Pipe, finally succeeded in defeating his purposes: nay, it even became unsafe for the council to meet at the seat of government (Goschachking); wherefore they, by the advice of their agent and the commandant at Pittsburg, were invited to remove to that town or its vicinity for protection, where they could transact business with the faithful part of their nation in safety. This good advice and excellent plan on the part of the American government was, however, also defeated; for while the friendly chiefs, together with a number of their people, were peaceably living together on an island just below the town of Pittsburg, they were suddenly surprised and attacked by the murdering party, which had returned from killing near a hundred of the Christian Indians, and partly killed and partly put to flight; from whence this chief (Killbuck) saved his life only by taking to the river and swimming across to the point or town, leaving all his property behind, among which was the bag containing all the wampum speeches and written documents of William Penn

Popular Names.	Proper Names, with Remarks.
Killbuck, jun.	and his successors for a great number of years, which had for so long a time been carefully preserved by them, but now had fallen into the hands of a murdering band of white savages, who killed at the same time the promising young Delaware chief above mentioned. The many services he rendered to this country, but more immediately Pennsylvania, were at that time known and duly appreciated; which services, however, being obnoxious to the enemy, drew their hatred upon him, so much so, that they declared him an outlaw—to be shot dead whenever met with. He had therefore to remain with his family at Pittsburg, and even after peace had been concluded between the United States and the Indian nations, he had concealed himself, when the drunken Indians were about the way. Finally, he joined the Christian Indians, and lived in a manner under their protection, yet never durst venture far from home, from a fear that some of the strolling Monseys, who threatened revenge, might come across and kill him. He received at baptism the name of William Henry, a name long since given him by an honourable member of congress of that name; after which he lived a good Christian, and died in January 1811, aged near eighty years.
Big Cat, so called by the white people, on account of his Indian name having that signification.	Machingue Puschüs (the large cat) was an able councillor for for many years, and afterwards a chief of the Turtle tribe, who assisted William Henry Killbuck faithfully in maintaining the nation at peace, he being also a firm friend of the American people, until they fell upon the Christian Indians on Muskingum, and murdered so many of them, and next attacked their camp at Pittsburg, killing the young chief and others; from whose murderous hands Big Cat narrowly escaped; and from that time, not trusting any more to their pretended friendship, he retired to the Miami, where he died
Captain Pipe.	Hopocan, *tobacco pipe*, was this chief's name for many years together, until in or about the year 1763 it was dropped, and he was called Kogieschquanohel, which means, *cause day light* (as already noted). While a war captain he also attended the councils of his chief, who was of the Turkey tribe. He was sensible, ambitious and bold, all which led him to strive for popularity. He had also signalized himself by his courage in his wars against the English nation, where he acted in conjunction with the French against them. He was known also as a schemer of plots and stratagems, in order to deceive the enemy. Thus at one time I (believe it was in or about the year 1763) he laid a plan for taking Fort Pitt by stratagem, in which scheme he however failed, and

Popular Names.	Proper Names, with Remarks.
Captain Pipe.	had the misfortune to be discovered and taken prisoner. This scheme in this instance was somewhat similar to the one which Pontiac had concerted for the taking of Detroit, and if I am not mistaken, it was to have been executed at about the same time. At both these fortifications the garrisons were then short of provisions. Pipe's scheme was, that under pretence that the nations were desirous of peace, he hoped to succeed in drawing the officers, with part of the troops, out of the fort to the place where councils with the Indians were generally held (which was on the green sod, just outside of the walls of the fort on the Allegany side); having drawn the officers and part of the garrison out, the attack was to be made at one and the same time on those within and without by the great body of Indian warriors, who were to descend the Allegany river on rafts made for that purpose, and so constructed that their arms and other weapons were concealed. Pipe not returning again to the warriors' encampment up the river at the appointed time, caused them to suspect that something must have happened, and that he had been either killed or taken prisoner, as, indeed, was the case; they then dispersed, and the scheme was entirely defeated. After a general peace had been concluded, he settled himself, with others of his tribe (the Wolf), on the Wahlhánding river (otherwise called White Woman's creek, and also the West Fork of Muskingum); whence he occasionally attended the great councils of the Turtle tribe at Goshochking, in the forks of the two rivers; until at length the revolutionary war afforded him an opportunity of withdrawing himself from this council, under pretence that he could not act in concert with those who were working their own destruction. He therefore sided with the British, and became a tool in the hands of their agents or subalterns in the Indian country. He was very eloquent. See Heckewelder's Account of the Indian Nations, and his Narrative of his Mission, &c. for further particulars respecting this chief. See particularly his Speech in Hist. Trans. page 121.
Chikenumnayundank.	This name signifies, *the carrier of turkeys*, to wit, *on his back*, as a load (alluding to his skill in killing these fowls). This man was a great war chief and a councillor of note, attached to Pachgantschihillas's party on the Miami; an orator scarcely to be excelled in point of *sweet, correct* language, and easy delivery. He was sensible and quick of comprehension; ingenious in conveying his sentiments figuratively; and when delivering himself publicly, as orator to the chiefs, he was listened to with the greatest attention.

Popular Names.	Proper Names, with Remarks.
Hokkenbomska, so pronounced by the white people.	Hackinkpomskan, which name means *to walk on the ground*, succeeded captain Pipe as chief, and was a sensible, spirited man, more liberal than his predecessor, and universally beloved. He boldly bid defiance to the prophet Tecumseh, when he charged him with witchcraft.
Wingenum, so called by the whites.	Wingénund, *he who is fond of*, or *values some quality of the mind.* See Heckewelder's Account of Indian Nations, chapter 38, page 279, under the head "Friendship."
Pegelen.	Pegílend, *he who throws away* (*any thing*), was an inferior chief, who occasionally carried messages, but being both a good hunter and trapper, delighted more in this occupation.
Woakahólend.	This means *loved and beloved*, or *loves and is loved;* was a councillor highly respected by all who knew him.
Pamaholen.	Pemaholend, *loved without intermission, he who is constantly loved.* He was a respected and venerable man, who was never known to quarrel, or to go to war. In the year 1799, after joining the Christian Indians, he accompanied missionaries to White river, in the Wabash country, where, after some years, he died, much regretted.
Wangómend.	This means, *he who is saluted, is met with friendship.* He was both a preacher and a prophet of the Monsey tribe. See Heckewelder's Account of Indian Nations, chapter 39, headed "Preachers and Prophets," and, for further particulars of this man, see Loskiel's History of the Mission, part 3, pages 22, 29, 33, 43, 44, 59, 62, 105.
Echpallawehund. . . .	*He who missed the object at which he shot*, or *that which he aimed at.* He was an amiable chief for a number of years together, but finally resigned, and joined the Christian Indians at Gnadenhütten; was baptised by the name of Peter, led a godly life, and died a Christian.
Pakánke.	This man was for many years the chief of Cuscheushke, on the Big Beaver, in Pennsylvania.
Killbuck, sen.	This Killbuck was a portly looking man; had been a great war chief during the French and Indian wars, spoke good English, and came in early times to Philadelphia on business with the governor. He was a sensible and amiable man, became quite blind a few years before his death, which happened about the year 1776.

Popular Names.	Proper Names, with Remarks.

King Beaver. . . . . Tamáque, which signifies *a beaver*, was his proper Indian name. He was for many years a head chief of the Delawares in the western country, and had his residence while I was out in 1762, at Tuscorawas, on the Muskingum. At the request of the governor of Pennsylvania, he went in that year with Christian Frederick Post to the treaty at Lancaster. He was admired and befriended by all who knew him. I considered him as my particular friend, and indeed he acted that part; for when he found that the Indian nations had resolved on a war with the British, he immediately apprised me of it, requesting me in a fatherly manner to go out of the country to a place of safety. He died about the year 1770, on the spot where, two years afterwards, the Christian Indians from the Wyalusing, on Susquehanna, built the town called Gnadenhütten.

Shingas. . . . . Properly Shingask, which signifies *level, boggy ground*, or *bog meadow*, was brother to King Beaver. He was, during the time of the French war, considered as the greatest Indian warrior of the day, and became a terror to the frontier settlements of Pennsylvania; wherefore the governor offered a reward of two hundred dollars, or pounds, I forget which, for his head or scalp. Though in war an enemy, yet those who knew him best, declared that he treated all those he had taken prisoners with affection. Passing one day with him, in the summer of 1762, near by where his two prisoner boys (about twelve years of age) were amusing themselves with his own boys, and he observing me looking that way, inquired what I was looking at. On my replying that I was looking at his prisoners, he said, "when I first took them they *were* such; but *they* are now *my* children, eat their victuals out of one and the *same* bowl!" which was saying as much as, that they, in all respects, were on an equal footing with *his own* children—alike dear to him.

Shingask was of small stature, but his actions proved that he had a great mind. He, as well as his brother, professed great friendship towards me, and his grown up sons rendered me, at different times, essential services. For other particulars of this great war chief, see the account of his wife's funeral, in Heckewelder's Account of the Indian Nations, chapter 37; Hist. Trans., page 264.

ARTICLE XII.

Notice of Fossil Bones found in the Tertiary Formation of the State of Louisiana. By Richard Harlan, M.D., &c. Read October 19. 1832.

IN conformity with a resolution recently passed by this Society, requesting me to describe the osteological fossil remains presented by Judge Bry, I have the honour to offer the following observations for publication in their Transactions. The fossils consist of several fragments of vertebræ, and one of immense size nearly perfect; together with specimens of the soil, and several osteological fragments too much mutilated to offer any descriptive characters.

For the local history of these fossils we are indebted to the following letter from the donor, addressed to our venerable President, Mr Duponceau.

Philadelphia, July 12. 1832.

Dear Sir,

I have the honour to present to you, for the Society over which you preside, some fossil bones, found on the Ouachita* river, in the state

* As I spell the word Ouachita differently from the apparently adopted mode, it may not be amiss to explain why I think that my orthography should be retained. The etymology of the word is in one respect descriptive of the country. The word Ouachita is composed of two Choctaw words; to wit, *ouae*, a buffalo, a cow, horned cattle in general, and *chito*, large, pronounced *tchito*, bearing lightly on the initial *t*. It meant the country of large buffaloes, numerous herds of those animals having formerly covered the prairies of Ouachita. All the names (now translated into French) of *River aux Bœufs*, *Bayou Bœuf*, have the same origin. These animals have disappeared before civilization, with the Indian tribes, whose principal

of Louisiana, at a distance (south) of about fifty miles by land, and one hundred and ten by water from the town of Monroe, in the parish of Ouachita, and in lat. 31° 46′ or 48′.

I regret that my very limited knowledge does not permit me to add to this offer such a dissertation on the subject as would be useful or even agreeable. A scientific memoir cannot be expected from one who has now spent the last thirty years of his existence literally in the remotest forests of Louisiana, whose life has during that long period been entirely devoted to agricultural pursuits, and who has consequently been deprived of all means of keeping pace with the progress of science; yet as I feel that it may be necessary to make you acquainted, as far as lies in my power, with the locality of these bones, I beg leave to submit the following observations.

It would be useless to offer more than a few casual remarks on the geology of Louisiana, which is better known to the Philosophical Society than to myself. That part of the state, beginning at the foot of the highlands of Bâton Rouge, on the eastern side of the Mississippi, and at the hills in the parish of Cataouta to the sea, is evidently soil of comparatively recent formation. You are probably acquainted with the character of the different strata on which rests the lower part of Louisiana. A description of them has been published as they occur on the Bayou* St John, near the city of New Orleans, where

support they formed. They never remain long within hearing of the repeated strokes of the axe, or of the voice of the white man. Nothing is left to remind us of them at *Ouachita* but the sound of this name, which may serve to keep in remembrance the fact of their former undisturbed possession of the country. The common orthography, *Washita*, destroys this allusion and means nothing in itself. By retaining the mode of spelling which I have adopted, it may serve to show how languages the most remote may receive the phraseology of one another.

The first settlers at Ouachita were French hunters, who adopted, with that facility peculiar to their nation, not only the Indian mode of living, but, in some instances, their expressions. Thus they found the country named *Big Buffalo*, and they marked the different epochs of their lives by such expressions as these:—*l'année de la grande eau* (1798); and *l'année de la grande ourse* (1810), when thousands of bears crossed the country, emigrating towards the west.

* As the most important point in making ourselves well understood, is to attach to words a permanent meaning, conveying at once and correctly the ideas we wish to express, I beg leave to observe that I understand the word *bayou* to mean a stream which has little or no current; such as the *Bayou de Siard*, the *Bayou de la Mâchoire a l'Ours*, which are

an enterprising gentleman (Mr Elkins) undertook to bore for good water. He reached to the depth of two hundred and twelve feet, but endeavoured in vain to bore deeper. At that depth the soil appears to be of the same nature as the deposite now made by the Mississippi, the intermediate strata being various; but no shells were discovered except fragments of some *bivalvæ*, exactly similar to those now found in the Bayou St John. Part of a crab was brought up by the auger, at a depth of one hundred and sixty feet; and, if my memory serves me aright, a piece of a buck's horn was also found.

The hills, beginning at Cataouta, extend north to the Arkansas river, and west to Red river, whence they spread to the Sabine. Through that tract of country are interspersed overflowed lands, varying in extent according to the magnitude of the creeks, of which they form the banks at low water, and which flow over them at high water. In these hills very few ores are found except those of iron, which are abundant in two different places; but no measures have yet been taken to ascertain their value. The highest of the hills do not exceed eight hundred feet above high water mark; and in many places they dwindle into gently rolling ground. These hills appear to be of a much more ancient formation than the lower section of Louisiana. No rocks, however, enter into their composition; but a few sandy stones and pebbles, nearly all *siliceous*, are occasionally seen scattered on their summits, or in the beds of the numerous creeks fed by springs issuing from them.

Sea shells are discovered in several places; I found them on the highest ridge which divides the waters running into Red river from the tributary streams of the Ouachita. The tract, by far the richest in calcareous substances, is the one within the limits where fossil bones have been found, extending about fifteen miles from north to south, and probably ten or twelve from east to west. Several years ago, while rambling among these hills, I met with a small creek, the banks

hardly any thing more than natural drains to the adjacent low lands. A *creek* I conceive to be a small stream running through the hills and highlands with a brisk and continued current, and emptying itself into the bayous, rivers, or overflowed lands. These two expressions are thus generally used in the upper parts of Louisiana.

of which are in some places thirty feet high, in which I found many different species of sea shells, among others, *pectenites*, *belemnites*, &c. At the same time, my attention was attracted by a quantity of *cornua ammonis*, the largest of which did not exceed an inch and a half in diameter, while many were much smaller.

The hill, in which the bones herewith presented were found, is within the limits above described, at a distance of not more than two hundred yards from the Ouachita river. About three years ago, after the occurrence of a long spell of rainy weather, a part of the hill slid down near to the water's edge, and thereby exposed twenty-eight of these bones, which had been until then covered by an incumbent mass of earth about forty feet thick. They were imbedded in a bank of sea marl, a specimen of which is added to the bones, as well as of the calcareous spar and *talc* also found in the same hill. I followed a horizontal vein of this marl, five or six inches thick, which I traced to a distance of about forty feet, when it sinks into the valley under an angle of from twenty-five to thirty degrees. It appeared to have effloresced where it had been long exposed to the influence of the atmosphere.

When these bones were first seen, they extended in a line, which, from what the person living near the place showed me, comprised a curve, measuring upwards of four hundred feet in length, with intervals which were vacant. The person referred to destroyed many of the bones by employing them instead of andirons in his fire place, and I saved what remained from the same fate. I think, however, that a great many more bones belonging to the same animal are yet covered, and will gradually appear, as the soil and marl shall be washed off by the rain.

If I might presume to express an opinion as to the animal to which these bones belong, I should venture to say that they were part of a sea monster. The piece having the appearance of a tooth, which I gathered myself on the spot, may assist in determining that point. To you, Mr President, and to your learned colleagues, who are so fully adequate to the task, I cheerfully relinquish the solution of this problem, as well as the determination of the epoch of our globe when the

animal existed. Accept, my dear sir, the expression of my great regard for yourself, and of my sincere wishes for the prosperity of the useful institution over which you preside.

Your friend and obedient servant.

H. BRY.

P. S. DUPONCEAU, Esq.
President of the Philosophical Society, Philadelphia.

The geological formation in which these bones occur is evidently tertiary, similar to that extensive belt which characterizes our Atlantic borders. The piece of "sea-marl" alluded to in the above letter, is a conglomerate mass of small marine shells, consisting principally of an extinct species of CORBULA, about to be described by Mr T. Conrad, who has met with a similar formation, including the same shells, in Alabama. Most of these shells are comminuted; a few however are perfect. On the upper surface of the mass, there remains a stratum of clay, half an inch in thickness, inclosing pieces of crystallized carbonate of lime. The portion noticed by Mr Bry as displaying the appearance of a tooth, does in reality possess considerable resemblance in size and form to the teeth of some of the fossil Sauriens; but, on closer inspection, it is recognizable as a portion of the cast of a PINNA, with some of the shell still remaining attached to its base.

The principal fossil which forms the subject of this paper, consists of a vertebra of enormous dimensions, possessing characters which enable us to refer it to an extinct genus of the order "Enalio-Sauri" of Conybeare, which includes numerous extinct genera of marine lizards or crocodiles, generally possessing gigantic proportions, which have hitherto been found only in the sub-cretaceous series, from the *lias* up to the weald clay inclusive, in England, France, and Germany, and in the supposed equivalent formations in North America. The animal to which the present remnant belonged, existed at a period more recent than that of any of its congeners hitherto discovered; the formation in which it occurs being generally referable to a geological epoch more recent than any of the oolitic series.

We have compared our fossil with the following genera:—Mososaurus, Geosaurus, Megalosaurus, Iguanadon, Ichthyosaurus, and Ple-

siosaurus; from all of which it appears to be generically distinct; though it bears a closer analogy to the vertebræ of the last named species than to any other. The length of the axis of the bone is twice its diameter, being fourteen inches long and seven inches broad. Its sides are slightly concave in the middle, and the weight of the single vertebra is forty-four pounds. Allowing this individual to possess as many vertebræ as the Plesiosaurus, that is sixty-six, without those of the tail, the weight of the whole fossil skeleton may be fairly estimated as exceeding two tons; even supposing each vertebra to weigh only thirty pounds instead of forty-four, and calculating the weight of the head, extremities, pelvis, and tail to be collectively but a little heavier than the spine alone.

Judging from the position and descending obliquity of the transverse apophyses, and the small size of the canal for the spinal marrow, this vertebra must be referred to the posterior part of the column, most probably to the lumbar region. This opinion is strengthened by the coalition of the two foramina or fossæ, which characterize the *inferior* aspect of the vertebræ of the *posterior* part of the column in the spinal bones of the *Plesiosaurus*;* in which respect these portions of the two fossils closely resemble each other. They are also similar in the *planes* of the articulating surfaces of the bodies of the vertebræ; but our fossil differs totally from the same portion of the Plesiosaurus in its proportions, the vertebræ of the latter being broader than long, whereas the present specimen is twice as long as it is broad. All the superior apophyses of the Plesiosaurus are attached by suture to their bodies; but there are no marks of such a structure in our fossil. In the Plesiosaurus, the ribs are articulated with the distal extremities of the transverse processes by a single tubercle. Reasoning analogically, the same arrangement may be referred to the species under consideration, the size of which is immensely superior to that of any of the Saurian or Cetaceous tribe whatever. Judging from relative proportions, the Megalosaurus did not attain to more than forty feet in length; the Iguanadon of Mr Mantell did not exceed sixty feet; but the individual

* All the vertebræ of the Plesiosaurus are characterized by two foramina on their inner aspect, which approach each other as we descend the column, until at last they form but one hole with a septum.

now produced could not have been less than from eighty to one hundred feet long. According to the statement of judge Bry, there were four hundred feet in extent, nearly in a linear direction, marked by these fossils in the soil, which undoubtedly include the remains of several individuals. If future discoveries of the extremities (paddles) and of the jaws and teeth of this reptile, should confirm the indications I have pointed out, we may suppose that the genus to which it belonged, will take the name, by acclamation, of "BASILOSAURUS."

ARTICLE XIII.

Notice of the Discovery of the Remains of the Ichthyosaurus in Missouri, N. A. By Richard Harlan, M.D., &c. Read October 19, 1832.

FOR the interesting specimen which forms the subject of the present memoir, I am indebted to the politeness of our fellow member, Major N. A. Ware, who obtained it from a trader, with the information contained in the following label:—"A trader from the Rocky mountains, on his return, near the Yellow-stone knobs, or hills, observed, in a rock, the skeleton of an alligator-animal, about seventy feet in length; he broke off the point of the jaw as it projected, and gave it to me. He said that the head part appeared to be about three or four feet long."

The fossil fragments consist of anterior portions of the upper and lower jaws. The form of the intermaxillary bone, the structure of the teeth, and the mode of dentition, characterize the animal to which these bones belonged as a species of the extinct genus ICHTHYOSAURUS: and afford us the first indication of the existence of this genus of lost animals on the continent of America.

Future discoveries will no doubt demonstrate that our country, already rich in fossil reliquiæ, possesses numerous species of fossil Sauriens, those extraordinary inhabitants of a former state of our planet, which sported on the bosom of the ocean, or enlivened the shores of primordial worlds, ere yet the "lord of the eagle eye" had scanned the creation, or waved his magic sceptre over the beasts of the earth. Strange, indeed, are the forms, structures and habits of those beings

with which geological researches are making us acquainted: in the beautiful and sublime at least, the pre-adamitic *Fauna* and *Flora* are as yet unsurpassed by those of the present day. Cuvier remarks,—the Ichthyosaurus has the snout of a dolphin, the teeth of a crocodile, the head and sternum of a lizard, the extremities of a whale, and the vertebræ of a fish; whilst the Plesiosaurus has, with the same cetaceous extremities, the head of a lizard, and a neck resembling the body of a serpent.

The remains of four or five species of the Ichthyosaurus have hitherto been discovered in England, France, and Germany. In England their remains have been found from the new red-sandstone even up to the green sand, which is immediately subjacent to the chalk. They consequently belonged to almost all that epoch of secondary formations, commonly known by the name of Jura formation; but it is to the blue-gray limestone, called *lias* by the British geologists, that we are to look for the greatest abundance of these organic remains. In the fragment from Missouri, consisting of the snout, or anterior portion of the upper jaw, the intermaxillary bone is strongly marked by sutures which separate it from portions of the maxillary bones, beyond which it extends nearly two inches anteriorly. The nostrils in this genus being placed near the eyes, the intermaxillary is consequently without perforations for nostrils, and displays a remarkably dense structure; its greatest breadth is two inches. It is perforated by several rather large foramina for the transmission of blood-vessels, and contains four incisor teeth, two on each side, broken off on a level with their sockets. The portions of maxillary bones attached, contain three teeth on each side, all equally broken off at the socket; thus making in all ten teeth in a space of alveolar processes four inches long—the total length of the fragment. The alveoles are perfectly distinct, and consist of circular osseous elevations, in the cavities of which the teeth are firmly fixed. The enamel is thick, brittle, and of a jet black colour; the cavities of the teeth are for the most part filled with spath and quartz. The truncated surface of the posterior portion of the fragment displays the mode of dentition, where the young tooth, also hollow, is observed to project its point on the inner side of the root of the old tooth; the root of which it destroys

by pressure during growth, and which falling, allows the young tooth to take its place, the point of the young tooth always cutting the gum on the inner and posterior part of the old tooth. On the inner and posterior part of the anterior left incisor, is observed the conical point of a young tooth, projecting in such a manner as to render a new socket necessary for its future accommodation.

All the natural vacuities of these bones are filled with the matrix or rock in which they occurred, which consists of a dense blue-black argillaceous limestone, effervescing with weak acids, and not unlike the matrix containing the bones of the Ichthyosauri from the lias of England. Beautiful and rich specimens of these fossils are contained in the cabinet of Mr G. W. Featherstonhaugh of this city. This fragment of jaw is four inches long, two inches eight tenths broad, and two inches in depth at its truncated part. It remains to notice the fragment of lower jaw of the left side, of equal length with the upper portions, and one inch two tenths in thickness, containing the remains of five teeth, broken, and partially covered with the matrix. The exterior surface of the bone is finely scabrous, or marked by the attachments of the skin, and displays numerous foramina for the transmission of nerves and blood-vessels. Near the base of the inner surface is a deep longitudinal canal, which probably extended the whole length of the jaw. From an experiment made by placing a portion of these fossils in a dilute solution of muriatic acid, the whole mass would appear to be soluble; thus denoting the loss of the animal constituent of the bones.

The above considerations enable us to pronounce with certainty on a fact, in itself interesting to the geologist, viz. the existence of the remains of the genus Ichthyosaurus in the secondary deposites on the banks of the Missouri river. In the present stage of the investigation it is probably premature to pronounce with equal certainty on specific distinctions; yet the magnitude of this skeleton, being thrice the size of the largest of the species yet described, and the geographical position of the fossil, seem to indicate such distinction. On comparison of the teeth of the present species with those of a fine specimen of the head of the largest species, the *I. communis*, in Mr Featherstonhaugh's collection, peculiarities were observable. It is highly probable that future discovery will throw more light on this interesting subject, as the

present skeleton would appear to be not the only one exposed to view in the valley of the Missouri; and, judging from the zeal, ardour, and scientific acumen with which such researches are prosecuted at the present day in all quarters, we may hope that the era of their resuscitation is not remote. To the Mosasaurus, Geosaurus, Sauroeephalus, and fossil erocodiles, the Ichthyosaurus and typifications at least of the Plesiosaurus may now be added to this department of the fossil Fauna of North America.

It is not improbable that Lewis and Clarke, in their Expedition up the Missouri, allude to the remains of a similar animal in the following extracts. "Monday, September 10th, 1804, we reached an island (not far from the grand detour, between Shannon creek and Poncarrar river), extending for two miles in the middle of the river, covered with red cedar, from which it takes the name of *Cedar Island;* just below this island, on a hill, to the south, is *the back-bone of a fish forty-five feet long, tapering towards the tail, and in a perfect state of petrifaction*, fragments of which were collected and sent to Washington. On both sides of the river, are high, dark-coloured cliffs."—Vide Lewis and Clarke's Exp. ed. 1814, vol. i. p. 69. Again, on descending the Yellow-stone river:—"The north side of the river, for some distance, is diversified by jutting romantic cliffs, these are succeeded by rugged hills, beyond which the plains are again open and extensive. After enjoying the prospect from this rock, to which captain Clarke gave the name of *Pompey's Pillar*, he descended and continued his course; at the distance of six or seven miles he stopped, and while on shore, he saw in the face of the cliff on the left, about twenty feet above the water, a *fragment of the rib of a fish, three feet long, and nearly three inches in circumference, incrusted in the rock itself.*"—Ibid. vol. ii. p. 358.

It has already been stated, that the fossils which we have described were obtained near the junction of the Yellow-stone and Missouri rivers. Should the fossils noticed in the above extracts, prove to be of a similar nature, the fact will display a formation extending from three to five hundred miles in a direction east and west, and north and south. Until further informed, it will be useful to apply to this species some specific appellation, and we propose to designate it as the Ichthyosaurus Missouriensis.

NOTE.

Since writing the foregoing essay, the author has enjoyed a more extensive field of observation, in the examination of the numerous and magnificent collections in every department of natural science, both in Great Britain and in France. He has satisfied himself that the Missouri fossil (I. Missouriensis) must be arranged as an extinct genus altogether new, characterised, more particularly, in the fragment in question, by the extreme length, breadth and projection of the intermaxillary bone, in which it presents a marked difference from any species of the genus Ichthyosaurus, and approaches, in a slight degree, animals of the Batrachian order.

EXPLANATION OF THE PLATE.

Fig. 1. Abdominal view of the vertebra of the Basilosaurus.

Fig. 2. Articulating surface of the body of the same.

Fig. 3. View of the superior surface of the anterior extremity of the snout of the *Ichthyosaurus Missouriensis*.

Fig. 4. The fractured surface of the same.

Fig. 5. Palatine surface of the same.

Fig. 6. Lateral view of the same, external surface.

Fig. 7. Internal lateral view of the anterior extremity of the inferior maxilla.

Fig. 8. Fractured extremity of the same.

ARTICLE XIV.

Descriptions of new North American Insects, and Observations on some already described. By Thomas Say. Read November 2. 1832.

AMBLYCHEILA, *Say.*

Labrum transverse much wider than long; mandibles prominent, strongly toothed; labial palpi elongated; basal joint short, entirely concealed by the mentum; second joint short, spherical, resting on the edge of the emargination of the mentum; the third joint elongated, cylindric, with rigid hairs; fourth joint enlarging to the extremity where it is truncate, somewhat sinuate; mentum, tooth robust, prominent, canaliculate before, acute; antennae, second joint two thirds the length of the third; wings none; elytra united; eyes very small, hemispherical, entire; clypeus at tip entire.

A. *cylindriformis*, Say, (Manticora) Journ. Acad. Nat. Sc. This insect which I found near the Rocky Mountains, I described under the genus Manticora, but judging by the present mutilated state of the specimen it seems to agree better with the Megacephala. It differs from Manticora altogether in form, in the smaller size of the head, and in not having a lobed thorax, &c., but it corresponds in the comparative magnitude of the eyes, the diameter of which is hardly more considerable than that of the basal joint of the antennæ. In the size of the eyes it differs greatly from Megacephala, also in the circumstance that the basal joint of its labial palpi is altogether concealed by the mentum: but it agrees with this genus in form, and is probably

more closely related to it than to Manticora. Still however, as it does not agree with any known group it may perhaps be proper to construct a genus for its reception.

MEGACEPHALA, *Latr.*

M. *Carolina*, Fabr. This species is certainly found in the southern part of the union: I have an individual that was taken near New Orleans, it varies a little from West Indian specimens in being less deeply sculptured.

CICINDELA, *Linn.*

1. C. *unicolor*, Dejean. This species appears to have an extensive range. I received a specimen from Dr Pickering of Massachusetts, and I found another in Florida. It varies in having a slight touch of white on the tip of the elytra.

2. C. *marginata*, Fabr., Syst. Eleut. 1, 241, No. 48. Dejean has described this species under the name of *variegata*, Sp. Gen. 1, 84—see also vol. 2, 414.

3. C. *unipunctata*, Fabr., varies in having a very small obscure yellowish spot, half way between the ordinary spot and the tip, on the margin.

4. C. *vulgaris*, Say, Trans. Amer. Philos. Soc. 1818. Since described by Dejean under the name of *obliquata*, Sp. Gen. 1, 72, but corrected vol. 2, Supp. 414.

5. C. *hirticollis*, Say, Trans. Amer. Philos. Soc. 1818. Since described by Dejean with the name of *repanda*, Sp. Gen. 1, 74, but corrected vol. 2, 414.

6. C. *dorsalis*, Say, Trans. Amer. Philos. Soc. 1818. Since described by Dejean with the name of *signata*, Sp. Gen. 1, 124, but corrected vol. 2, 414, Supp.; and on page 426 of the same Supplement he describes another species under the name of *dorsalis*, which however will of course be changed, as mine has the priority.

7. C. *purpurea*, Oliv., Ins. 33, pl. 3, f. 34. Say, Trans. Amer. Philos. Soc. 1818, p. 419. C. *marginalis*, Fabr., Syst. Eleut. 1, 240, and Dejean, Sp. Gen. 1, 55. Olivier has certainly the priority, and consequently the exclusive right as being the first describer of this species.

8. C. *sexguttata*, Fabr. Dejean has ascertained autoptically that C. *violacea*, Fabr. is the immaculate variety of this species.

9. C. 12-*guttata*, Dej. I obtained a specimen in Missouri state.

Of this genus I have in my cabinet twenty-two species, natives of the United states, that have been described.

ARETHAREA, *Say.*

Artificial character—Elytra truncated; terminal joint of the maxillary palpi acicular; anterior tibiæ simple.

Natural character—Head large, wider than the thorax, contracted behind at the junction with the thorax; antennæ originating beneath a carina, with the first joint much shorter than the head: labrum short, bilobated; the lobes divaricated; margin hairy; mandibles very prominent, arquated, acute: within prominently and acutely denticulated: maxillæ rectilinear with rigid hairs within; palpi with the penultimate joint dilated; ultimate joint acicular and minute; labium at tip with two equal membranaceous lobes and a lateral robust seta: palpi very small and feeble, terminal joint somewhat shorter and more slender than the preceding one; mentum transverse, simple; destitute of auricles: thorax cylindrical: truncate before and behind; elytra broadly truncate at tip: tibiæ, anterior pair simple; tarsi with subequal simple joints; the basal one slightly longest; nails unarmed; posterior pair of feet with the nails pectinated.

Observations—The prominent, arquated and denticulated mandibles of this curious insect resemble, with some accuracy, those of Cicindela; but the general appearance and extraordinary assemblage of characters widely separate it. It has the truncated elytra of Lebia and its congeners; the simple anterior tibiæ of Cicindela; and a singular character that seems to connect the two families, that of having the anterior pair of nails simple and the posterior pair pectinated. We may also remark, however, that the acicular terminal joint of the maxillary palpi is a trait in common with Bembidium, Bon.

A. *helluonis*. Head black; thorax rufous; elytra blue.—Inhab. Pennsylvania.

Head punctured, somewhat hairy; *eyes* small, almost equidistant

between the tip of the mandibles and the thorax; *antennae*, first and second joints pale rufous; *labrum* yellowish rufous; *mandibles* piceous; palpi pale yellowish rufous: *thorax* punctured, excepting along the dorsal middle; *elytra* destitute of striae or punctures, blue with a purplish reflection; *feet* and *postpectus* pale yellowish; knees and tarsi brownish.—Length three tenths of an inch.

The intermediate feet and the antennae excepting the first and second joints are deficient in the specimen. I am not sure whether I obtained it on our journey to the Rocky Mountains, to St Peter's river, or in Pennsylvania, but I think the latter.

CASNONIA, *Latr.*

C. *rufipes*, Dej. The insect of this genus represented by Drury (Ins. 1, pl. 42, f. 4 and 6) is probably a variety of this species. Dejean has not noticed this figure at all. The Galerita Americana is represented in the same plate.

SPHERACRA, *Say.*

Elytra entire; tibiae emarginate; terminal joint of the tarsi profoundly bilobated; nails simple; head as long behind the eyes as before them; thorax subcylindric; antennae much shorter than the body; basal joint much shorter than the head, joints excepting the second not very unequal in length, subcylindric; labrum emarginate; palpi with the terminal joint somewhat fusiform, subacute: mentum with a prominent acute central tooth.

S. *dorsalis*, Fabr. "Black; elytra striate, testaceous; suture broadly black. Inhab. Carolina. Mus. Mr Bosc.

"Smaller than O. *angustata*. Antennae testaceous: head black, polished, broader than the thorax; thorax cylindrical, obscurely ferruginous; elytra striate, testaceous; suture broadly black, hardly attaining the tip; body black; feet testaceous." Fabr.

Odacantha *dorsalis*, Fabr., Syst. Eleuth. 1, 229.

In my specimen the head only is black, or rather of so deep a rufous as to appear black, excepting the tip and base.

This well known species was referred by its discoverer Fabricius, to his genus Odacantha; in which arrangement he was followed by Dejean, who, however, was fully aware of its generic difference from the O. *melanura*, Fabr. Dejean, in his observations on the genus, says, "that in consequence of the joints of the tarsi being less filiform than those of the type of the genus, almost triangular, the penultimate one deeply bilobate and the extremities of the elytra rounded, it would be perhaps proper to make a new genus of this insect." In this remark I perfectly coincide, as I cannot see the propriety of joining, in the same genus, two insects whose characters in the artificial system place them in different families, though it cannot be denied that they have many, more intimate, natural affinities.

I had written the above with the expectation of introducing a new species, in an insect which, in form and colour, resembles the *dorsalis* exceedingly to the eye, excepting in size: but on close examination it proves to be widely distinct.

CYMINDIS, *Latr., Dej.*

1. C. *platicollis*, Say, (Lebia) Trans. Amer. Philos. Soc. vol. 2, new series.

This species has been since described by Dejean under the name of C. *complanata*. In my specimens the palpi are hardly dilated. It varies in having the thorax darker and of the colour of the head. I obtained an individual in Indiana.

2. C. *laticollis*. Blackish; thorax transverse: feet pale rufous: elytra with slender striae and minute punctures.—Inhab. near the Rocky Mountains.

Body black-brown, punctured, with short hairs: *head* ——; *thorax* decidedly transverse, with numerous somewhat large punctures: truncate before, and a little sinuate behind; margin each side depressed and a little elevated, dull rufous; at the posterior an obvious tooth; *elytra* with very slender capillary striae in which are minute punctures, which are larger and more obvious towards the base and lateral margin; interstitial lines with a very slight convexity, and with numerous small punctures, rather larger than those of the striae; lateral margin

obscure rufous; tip truncate, without any appearance of sinuation: beneath obscure rufous, punctured; *feet* rufous; *thighs* and *trochanters* paler.—Length about two fifths of an inch.

I obtained it when on the expedition to the Rocky Mountains with Major Long. The thorax is shaped somewhat like that of *Americana*, Dej., but is wider, as in *platicollis*, Say. The elytra have not the slightest appearance of being sinuated at tip.

3. C. *pilosus*, Say, Trans. Amer. Philos. Soc. Since described by Dejean, under the name of *pubescens*, Sp. Gen. 1, p. 215, but corrected in vol. 2, Suppl. p. 446.

CALLEIDA, *Dej.*

1. C. *viridipennis*, Say, (Cymindis) Trans. Amer. Philos. Soc.

This species has been since described by Dejean, under the name of *marginata*, v. Spec. Gen. 1, p. 222, but corrected vol. 2, Supp. p. 450.

He has given the name of *viridipennis* to another species; but as it is a subsequent name, he will of course change it.

2. C. *smaragdina*, Dej. A specimen of this insect was sent to me by Dr Pickering, from Salem, Massachusetts, so that it is probably a general inhabitant of the Atlantic states, but as I have found it myself but once (in the state of Ohio), I should suppose it is rare.

3. C. *purpurea*, Say, (Cymindis) Trans. Amer. Philos. Soc.

4. C. *decora*, Fabr. Say, (Cymindis) Trans. Amer. Philos. Soc. Dej., Sp. Gen. 1, 224.

LEBIA, *Latr.*, *Dej.*

1. L. *ornata*, Say, Trans. Amer. Philos. Soc.. Since described by Dejean under the name of *analis*, Spec. Gen. 1, 265, and corrected, 2, Supp. 452.

2. L. *viridis*, Say, Trans. Amer. Philos. Soc. Dejean has described a species under the same name. It is closely allied to, if not the same as this, but if not the same species, the name must of course be changed. Spec. Gen. 1, 271.

3. L. *fuscata*, Dej. varies in having the head nearly black, the tho-

rax yellowish ferruginous, and the elytra paler brown, with the yellowish spots, particularly the terminal, almost obsolete.

BRACHINUS, *Weber.*

B. *stygicornis.* Ferruginous; antennae black; elytra blackish blue. —Inhab. Missouri.

Body ferruginous, with short hairs: *head* with irregular punctures: each side between the antennae, becoming irregular, but slight; lineations near the eyes: *antennae* brownish-blue, first and second joints ferruginous: *thorax* with minute, irregular, transverse lines, dorsal lines well impressed: *elytra* slightly grooved, more obviously so towards the base; edges beneath purplish; *postpectus*, except in the middle, and *venter* blackish, with short whitish hairs.—Length seven twentieths of an inch.

Var. *a.* Sutural edge of the elytra ferruginous.

I obtained this species in the winter of 1819, when with Major Long's party at Engineer Cantonment near Council Bluff. It occurred in considerable numbers, occupying some crevices of rock, eight or ten feet under the surface, in a temporary quarry, where they were hybernating. It differs from *cyanipennis*, Say, found at the same locality, by the different colour of the antennae, &c.

Can this be the *janus*, or is the *quadripennis*, Dej., synonymous with that species described in Turton's Linn.?

CLIVINA, *Latr., Dej.*

1. C. *bipustulata*, Fabr. The true species of this author, has almost always, if not in every instance, but two spots on the elytra, and these are terminal. The second interstitial line has seven or eight subequidistant punctures, and the fourth interstitial line has five or six punctures, subequal, excepting the terminal one which is more distant.

2. C. *quadrimaculata*, Palisot de Beauvois. This species is quite distinct, though very closely allied to the *bipustulata*. It is similar in size and almost so in form; but the thorax is proportionally longer. In colour it is generally like the preceding, but in addition to the two terminal punctures of the elytra, their base is more or less, but generally obsoletely, tinged with obscure rufous. The interstitial lines are

altogether destitute of punctures. I have a variety in my collection, of which the elytra are entirely of a rufous colour and even paler than the terminal spots usually appear; these spots are of course not visible.

3. C. *viridis*, Say, Trans. Amer. Philos. Soc., has been since described by Dejean under the name of *rostrata*, Sp. Gen. 1, 419, but corrected vol. 2, Supp. 478.

Of this genus I have eight described species of this country.

CARABUS, *Linn.*

1. C. *vinctus*, Weber. I think it highly probable that Dejean is right in considering, as he does (doubtfully however), my C. *interruptus* to be the same as this. Weber's expression, "lineis elevatis tribus," renders this conclusion highly probable.

2. C. *ligatus*, Germar, Sp. Novæ, p. 6. Since described by Dejean under the name of *carinatus*, Sp. Gen. 2, 80. He quotes *ligatus* doubtfully as synonymous. His description, however, agrees so perfectly that I feel no hesitation in considering them the same.

3. C. *serratus*, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of *lineato-punctatus*, Sp. Gen. 2, 77; the former has, of course, the priority.

4. C. *externus*, Say, Jour. Acad. Nat. Sc. The largest American species I have seen. It belongs to Dejean's twelfth division of this numerous genus. What is the C. *taedatus*, L.?

CALOSOMA, *Weber.*

1. C. *luxatum*, Say, Jour. Acad. Nat. Sc. 3, 149. Dej., Sp. Gen. 2, 196.

2. C. *laeve*, Dej., Sp. Gen. 2, 210. I obtained an individual of this insect in Mexico. It corresponds accurately with the description; but in addition I may add that it varies in having a large obscure rufous spot on the vertex.

3. C. *calidum*, Fabr. My description in the Trans. Amer. Philos. Soc. was taken from the true Fabrician species as is evinced by the expression "dilated, impressed, golden dots" as applied to the elytral

excavations. But I did not sufficiently examine the very closely allied species which Dejean has separated from it, as I supposed it to be only a variety.

ELAPHRUS.

1. E. *fuliginosus*. This new species was found in Pennsylvania by Mr Le Sueur, to whom I am indebted for the specimen: and although the head and thorax are destroyed, yet sufficient character remains to prove it the analogue of the E. *uliginosus*, Fabr., of Europe. In comparison with that species, however, many dissimilarities are perceptible. The discoidal indentations are larger and more obviously emarginated by the entering angles of the interstitial spaces. The interstitial spaces are somewhat less regular, and have rather large punctures, particularly towards the base; towards the tips of the elytra the punctures are not larger than those of the *uliginosus*, but are fewer in number. The body is slightly larger than in that species. It appears to be rare.

2. E. *ruscarius*. This species I described in the Trans. Amer. Philos. Soc., with a mark of doubt, as the E. *riparius*, Fabr., but having recently compared it more accurately with numerous European specimens, I think it may, with propriety, constitute a distinct, but certainly very closely allied species. In comparison with the *riparius*, it is rather more robust, of a darker colour, more deeply sculptured, as well on the thorax as on the elytra, and the discoidal impressions are somewhat larger and more obvious.

In these characters my specimens all agree, and I possess more or less mutilated specimens from Pennsylvania, Mississippi, Arkansaw, Missouri and the Rocky Mountains. I therefore have ventured to separate it as a distinct species.

NOTHIOPHILUS, *Dumer.*

1. N. *semistriatus*, Say. Closely allied to N. *aquaticus*, F., and *biguttatus*, F., partaking of the characters of both. Dejean states that it "ne diffère peut-etre pas de l'une des especes d'Europe," but he does not inform us which of the species; indeed they are all so closely

allied, that considerable examination is required to detect permanent differences. The elytral puncture is small, and like that of *aquaticus*, placed nearer the base than that of the *biguttatus*, but the striae, like those of the latter, are not obsolete towards the tip; the four basal joints of the antennae are rufous, &c.

2. N. *porrectus*, Say. N. *semistriatus*, var. *b*, Say. Trans. Amer. Philos. Soc. On close examination I am convinced that this deserves to rank as a separate species. In comparison with either of the species above mentioned, the *thorax* is much more contracted behind, and the *labrum* is more advanced. The feet are entirely rufous, even including the thighs. The head is larger than that of the *semistriatus*, and the striae are not so deeply impressed, but the impressed point of the elytra is similarly situated, though perhaps a little further back. The length is much the same. The colour is tinged with violaceous.

CHLÆNIUS, *Bonelli*.

1. C. *pusillus*, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of *elegantulus*.

2. C. *tomentosus*, Say, (Epomis) Trans. Amer. Philos. Soc. This species has been referred to this genus by Dejean; the palpi are not sufficiently securiform for Epomis.

3. C. *circumcinctus*. Green tinged with violaceous; edges rufous. —Inhab. Louisiana.

Body green, more or less tinged with violaceous and brassy, punctured; *head* minutely and confluently punctured; in the middle tinged with bronze; lateral edges dark purplish; *antennae* reddish brown, three basal joints pale yellow with rufous incisures; *labrum* and *mandibles* honey yellow, the latter black at tip; *palpi* yellow; terminal joints honey yellow; *thorax* deeply punctured, sparse near the anterior angles, and almost wanting each side of the middle; dorsal line acute, almost obsolete; basal lines widely indented; lateral edge regularly arquated, dull rufous; basal edge rectilinear in the middle and a little oblique each side, making the angles rather more than rectangular; green a little tinged with brassy: *scutel* dark purplish; *elytra* with profound, obsoletely punctured striae; interstitial spaces flattened, punc-

tuated, sericeous; rather dull green with a slight violaceous reflection; exterior and apicial edge dull rufous; beneath black: *feet* yellow, joints a little rufous; *venter* on the margin yellowish.—Length over two fifths of an inch.

For this pretty species I am indebted to Mr J. Barabino of New Orleans.

4. C. *vigilans*. Head and thorax brassy: antennae at base and feet ferruginous; elytra violaceous.—Inhab. Mexico.

Pubescent; *head* impunctured, brassy-green, polished; two obsolete indentations between the antennae; *labrum* transversely narrow, truncated, and with the *palpi* dull rufo-ferruginous: *antennae* fuscous, pubescent, three basal joints subglabrous, rufo-ferruginous; *thorax* brassy-green, with rather dense, very short hair, polished: dorsal and basal impressed lines distinct; posterior angles not excurved, but obtusely angulated, almost rounded; *elytra* bluish violaceous, with punctured striae; interstitial spaces pubescent, depressed, and minutely granulated, *beneath* blackish; feet rufo-ferruginous.—Length half an inch.

Much like C. *nemoralis*, Say, but the antennae of that species are entirely rufo-ferruginous, its posterior thoracic angles are slightly excurved, &c.

5. C. *soccatus*. Blackish; feet ferruginous with blackish tarsi and joints.—Inhab. Mexico.

Body blackish, with a slight violaceous tinge; minutely pubescent, punctured; *head* blued-black, glabrous, two slight indentations between the antennae, and an obsolete transverse one between the eyes; *antennae* pubescent, blackish, three basal joints dark piceous; *palpi* piceous; *thorax* short; lateral margin regularly arquated: posterior angles rounded: impressed lines dilated; elytra with punctured striae: interstitial spaces minutely granulated, depressed; *beneath* blackish; *feet* rufo-ferruginous, joints and tarsi blackish-piceous.—Length nearly half an inch.

Resembles *vigilans*, Nob., but the thorax is shorter and the lateral curvature is more regular, that of the preceding species being almost rectilinear from near the middle to the posterior angles; the colours also are different in their arrangement.

Of this genus I have sixteen North American described species.

OODES, *Bonel.*

O.? *parallelus.* Black; thoracic angles rufous; feet piceous.—Inhab. Louisiana.

Body black, very slightly tinged with piceous; *head* with but a slightly impressed point between the antennae; *antennae* reddish brown, three basal joints honey yellow; *palpi* honey yellow; *mandibles* piceous; *thorax* narrowed before, smooth, dorsal line distinct, not extended on the margins; basal lines distinct, oblique; region of the posterior angles a little, but widely, depressed, rufous or sanguineous, and by transmitted light it appears reticulated; impunctured; posterior angles rounded, but not obtusely so; greatest width a little behind the middle; *elytra* with the striae continued parallel to the tip, well impressed, minutely punctured; interstitial spaces depressed, third with a single slight puncture on the posterior fifth from the base; *beneath* black; posterior angles of the *pectus*, *epipleura* and *feet* piceous; *anterior tarsi* with four not widely dilated subquadrate joints, the fourth joint being as large as the third, and all beneath with dense fastigiate hairs; *intermediate tarsi* also somewhat dilated.—Length less than two fifths of an inch.

The elytra are hardly perceptibly sinuous near the tip.

The specimen, for which I am indebted to Mr J. Barabino of New Orleans, is a doubtful congener of the O. *helopoides*, Fabr., than which the body is somewhat more elongated, the thorax more gradually narrowed before. It has at first sight more the appearance of the Harpalus *terminatus* or Calathus *gregarius*, Say. The intermediate tarsi are somewhat dilated, the anterior tarsi are not widely dilated and the terminal joint is as large as the preceding one. I place it in this genus provisionally, more specimens may show this arrangement to be incorrect. The parallelism of the striae of the elytra to their termination is a remarkable character, even more obvious than in the *helopoides*.

DICÆLUS, *Bonelli.*

1. D. *purpuratus*, Bonelli. Since described by Dejean under the name of *chalybæus*, Sp. Gen. 2.

2. D. *elongatus*, Bonelli. Say, Trans. Amer. Philos. Soc. Dejean is of the opinion that this is not the *elongatus* of Bonelli, and has described it with the name of *furvus*, but he has not stated the reasons for this opinion.

POGONUS, *Zcigl.*

P. *rectus*, Say, (Feronia) Trans. Amer. Philos. Soc. I may add to the description that the striae are well impressed and punctured rather densely on the sides; third interstitial line with about three punctures, excepting the middle one, hardly distinct from the punctures of the striae.

PATROBUS, *Meg.*

P. *longicornis*, Say, (Feronia) Trans. Amer. Philos. Soc. Recently described by Dejean under the name of *Americanus*, Sp. Gen. 3, p. 34. Why he has added a synonym in this case, I know not.

ANCHOMENUS, *Bonelli.*

1. A. *decentis*, Say, (Feronia) Trans. Amer. Philos. Soc. Has been recently described by Dejean under the name of *gagates.*

2. A. *cincticollis*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Germar under the name of *blandus*, Sp. Novæ, p. 12, and recently by Dejean by the name of *corvinus*, Sp. Gen. 3, p. 109.

3. A. *extensicollis*, Say, (Feronia) Trans. Amer. Philos. Soc., is also referred by Dejean to this genus.

4. A. *decorus*, Say, (Feronia) Trans. Amer. Philos. Soc. is also referred to this genus by Dejean.

5. A. *collaris.* Black with a hardly obvious tinge of purple; tibiæ and tarsi piceous; thorax subquadrate; elytra with three punctures on the third interstitial line.—Inhab. Indiana.

Body black, polished, glabrous, with a few, rather long, marginal

hairs; *head* impunctured; base of the first joint of the antennae, of the mandibles black-piceous; antennae at tip brownish, third joint of the same length as the fourth; impressions between the eyes rather deep; *thorax* rather short, wider than long, subquadrate, impunctured; lateral edge regularly curved; margin slightly elevated, narrow, broader towards the posterior angles; dorsal and anterior lines distinct; posterior lines dilated, suborbicular, slightly rugous; posterior angles very obtuse; anterior and posterior margins subequally broad; *elytra* with acutely impressed striae, regularly punctured; punctures small, obsolete towards the tip; third interstitial line with three punctures, two at the third stria and the terminal one at the second stria; interstitial lines much depressed; *tibiæ*, *tarsi*, knees and extreme base of the thighs piceous.—Length seven twentieths of an inch.

This species is rather more robust in proportion to its length than the other American species. The thorax is much broader and shorter. The species is perhaps more like *scutellaris*, Say, than any other: that insect is remarkably depressed about the region of the scutel.

AGONUM, *Bonelli.*

1. A. *suturale.* Green, polished: suture cupreous.—Inhab. Mexico.

Above metallic green, polished, impunctured; *head* with a slight coppery reflection; *labrum*, *antennae* and *palpi* blackish: *thorax* varied with cupreous, dorsal line and basal dots obviously indented; *elytra* with very slender striae; interstitial spaces wide and plain, first one cupreous, third with three punctures, equidistant, basal one on the third stria, middle one on the second stria; beneath piceous black: *coxae* piceous.—Length three tenths of an inch.

This is a brilliant species, equalling in this respect the 8-*punctatum*, Fabr., and *errans*, Nob. and but little inferior to *cupripenne*, Nob., all of which, together with *nutans*, Nob., belonging to this genus, although I referred them to the including genus Feronia, Latr. The *cupripenne*, Nob., is equal in splendour, though not in magnitude, to the 6-*punctatum*, Fabr. In comparison with *parum punctatum*, F., the form is more robust, thorax more brilliant, wider, and is as wide at base as anteriorly; the interstitial spaces also are much more flattened.

2. A. *orbicollis.* Black; thorax rounded; third interstitial line with three punctures.—Inhab. Mexico.

Body black, polished, impunctured; *antennæ* ——, basal joint and *palpi* piceous; *thoraæ* orbicular, truncate before and slightly so behind: lateral edge regularly arquated, not depressed, but with a simple and equally elevated edge; dorsal line obsolete, anterior and posterior transverse lines obsolete; basal impressed lines or dots distinct; *elytra* with well impressed striæ, which are crenate, not punctured; interstitial lines convex, the third from the suture with three equidistant punctures; *feet* piceous.—Length nearly seven twentieths of an inch.

Size of A. *viduum*, Fabr., with similar punctures on the third interstitial line, excepting that they are equidistant, and these lines are more convex, the thorax is much more orbicular, the feet differently coloured, and there is no brassy reflection. This cannot be the *melanarium*, Dej., for the striæ are as obvious as in the *viduum*, and although the thorax agrees with that insect in being "plus etroit" than that of the viduum, yet it would not be described as "subrotundato," as that author applies the same term to designate the form of the thorax of viduum. It is much like A. *punctiforme*, Say, but it is a little more elongated, the thoracic lines are much less distinct, &c.

3. A. *nutans*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean with the name of *striatopunctatum*.

4. A. *errans*, Say, (Feronia) Journ. Acad. Nat. Sc. The interstitial space has three punctures, of which the first and second are somewhat nearer than the second and third.

5. A. *punctiforme*, Say, (Feronia) Trans. Amer. Philos. Soc. I have an individual that has four punctures on the third interstitial space, as Dejean describes his *albicrus* to have.

6. A. *obsoletum*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean by the name of *luctuosum*, Sp. Gen. 3, 172.

7. A. *limbatum*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean by the name of *palliatum*, Sp. Gen. 3, 174.

OLISTHOPUS, *Dejean.*

1. O. *parmatus*, Say, (Feronia) Trans. Amer. Philos. Soc. Dej. Sp. Gen. 3, p. 181.

2. O. *cinctus*. Blackish; edge of the thorax, elytra and feet dull rufous.—Inhab. Pennsylvania.

Body blackish; *head* impunctured; *antennae* dusky, pale rufous at base; *palpi* piceous; *thorax* with the dorsal and anterior lines almost obsolete; lateral narrow margin obviously rufous; lateral basal impressions very distinct, suborbicular and sparsely punctured; *elytra* dull reddish brown, with a slight perlaceous reflection; *striae* well indented, impunctured; interstitial spaces depressed, third space with an impressed puncture beyond the middle; *feet* yellowish piceous, posterior pair darker.—Length less than three tenths of an inch.

Much like the *parmatus*, Say. It is more slender.

FERONIA, *Latr.*, *Dej.*

POECILUS, *Bon.*

1. F. *convexicollis*, Say, resembles F. *chaleites*, Say, but is shorter, the thorax more convex, and the punctures of the third interstitial stria of the elytra are three, of which the terminal is near the tip.

STEROPUS, *Meg.*

2. F. *obsoleta*. Blackish-ferruginous; elytra, striae obsolete each side and at tip.—Inhab. Indiana.

Body very dark rufous, polished; *labrum*, *palpi*, *mandibles* at base, *antennae*, *feet* and *abdomen* honey yellow; *head* impunctured; a slight raised line over the antennae, inside of which the front is slightly corrugated transversely each side; *thorax* with the surface obsoletely corrugated, visible in a particular direction; dorsal line acute, slightly impressed; basal lines indented, single, viewed from above orbicular, definitely and rather deeply impressed; base a little emarginate, not wider than the abdominal petiole; *elytra* with punctured, not deeply impressed striae, obsolete at tip and on each side; marginal ocellate punctures about seventeen, in a continuous series rather sparse in the middle; near the tip very slightly sinuated; third interstitial space with a punc-

ture near the middle of the second stria.—Length two fifths of an inch.

Closely allied to S. *illigeri*, Panz., but the thorax of that species is not so narrow at base, and its elytral striae are not obsolete at tip, and not even decidedly so on the sides. It is exceedingly like S. *ventralis*, N., but it is more robust and the sides of the elytra are more arquated.

The characters of this species agree very well with the description of *tenebricosa*, Dej., excepting that the elytra are not "assez fortement sinuees posterieurement."

3. F. *obscura*. Black; tibiae and tarsi dark rufous; elytral striae obsolete on each side.—Inhab. Indiana.

Body black; *labrum* and base of *mandibles* tinged with rufous: *palpi* dull honey-yellow; *antennae* blackish-ferruginous: front with two indented lines; *head* impunctured: *thorax* not so narrow at base as the petiole; dorsal line acute, not deeply impressed: basal lines well indented, definite, impunctured, not orbicular viewed in any direction, very slightly arquated; *elytra* striate; the striae not distinctly punctured, obsolete on the lateral submargin, and not so obvious at tip as on the disk; marginal ocellated punctures about seventeen; near the tip rather slightly sinuate; third interstitial tripunctured, the two anterior punctures at the third stria.—Length less than nine twentieths of an inch.

Resembles the preceding, but the thorax at base is wider, and the body is longer. In the proportion of the base of the thorax it corresponds with F. *illigeri*, Panz., but aside from colour it may be distinguished by the obsolete lateral striae, the much less dilated thoracic basal lines, &c.

PLATYSMA, *Sturm, Dej.*

4. F. *oblongo-notata*. Dark reddish-ferruginous; elytra with five or six large subsutural punctures.—Inhab. N. W. Territory.

Body with a hardly perceptible metallic gloss: *head* darker; *thorax* with the dorsal line very distinct; lateral basal lines well indented and with obsolete confluent punctures; posterior angles angulated; *elytra* striated; five or six large indented punctures placed somewhat

alternately on the second and third striae; marginal ocellate punctures with their regions indented.—Length nine twentieths of an inch.

This is the analogue of the F. *oblongo-punctata*, F., corresponding in the punctures of the elytra; but differing in colour, and having the thorax somewhat more robust.

5. F. *deparca*. Reddish-brown; thorax punctured on the anterior and posterior margins.—Inhab. Mexico.

Body reddish brown, rather pale; *head* much darker, tinged with blackish, impunctured; *antennae* short, not reaching the base of the thorax; *thorax* rather abruptly contracted behind; anterior and posterior margins deeply punctured, the punctures of the former not extending to the lateral margin; lateral margin with a puncture furnishing a hair on the middle and another on the posterior angles, which are rectangular; dorsal line distinct, but not deeply impressed; basal impressions dilated and with all the base punctured; *elytra* with slender striae, not deeply impressed, but with very distinct punctures; seventh stria obsolete towards the tip; *epipleura* and all beneath paler.—Length nearly half an inch.

The light colour, with the punctured anterior and posterior thoracic margins, will distinguish this species.

It was taken by William Bennett and presented to me by Mr Maclure.

ABAX, *Bonelli*.

6. A. *coracinus*, Say, Trans. Amer. Philos. Soc. I think this is the insect that Dejean has recently placed in Ziegler's genus Myas, and described under the name of *cyanescens;* the insect agrees perfectly with his description, but as the palpi of my only remaining specimen are deficient, I cannot be certain of its generic identity.

7. F. (A.) *permunda*. Black, with a pearlaceous reflection; third interstitial line three-punctured.—Inhab. Indiana.

Body black; *antennae* piceous, dull honey-yellow towards the tip, distinctly compressed;—joints, in profile a little narrowed to the base; *palpi* piceous, not at all securiform, terminal joint less dilated at tip than that of the preceding joint; *thorax* with a slight pearlaceous reflection, rather narrower at tip than at base; lateral margin depressed,

punctured, gradually reflected to the edge, which is but little arquated: posterior angles rectangular; disk impunctured; dorsal line well indented; basal lines two on each side, punctured within, deeply impressed, the exterior one very short; *elytra* brownish-black, somewhat iridescently pearlaceous; striae deeply indented, impunctured; scutellar stria short, but definite; interstitial spaces convex; third three-punctured, first puncture near the base on the third stria, second on the middle on the second stria, third towards the tip also on the second stria: beneath piceous; sides very distinctly and numerously punctured.—Length half an inch.

I obtained this fine species a few days since under an old log. It does not at all agree with either of the descriptions of Dejean. The labrum is not emarginate. The terminal joint of the palpi is less dilated towards the tip than that of the A. *parallelus*, Duftschm., or A. *metallicus*, Fabr.

MOLOPS, *Bonelli.*

S. F. *constricta*, Say, Journ. Acad. Nat. Sciences.

STOMIS, *Clairv., Dej.*

S. *granulatus*. Black, antennae dull rufous, blackish piceous towards the base.—Inhab. Mexico.

Body black, apterous, polished; *head* impunctured; impressed lines between the antennae very obvious; *antennae* blackish piceous to the fifth joint, which with the others are dull rufous; first joint hardly as long as the third; *labrum* a little prominent, piceous, widely but not deeply emarginated before; *palpi* dull rufous, not very widely truncated at tip; labial not securiform; *mandibles* prominent very acute; *thorax* as long as broad, not remarkably convex; impunctured; dorsal line distinct, not extending to the base, which is a little depressed; lateral margin depressed and reflected, narrow, wider near the posterior angles, which are somewhat acute; lateral edge excurved near the posterior angle; basal lines distinctly indented and dilated: base considerably wider than the peduncle; *elytra* somewhat depressed, ovate-oval; surface composed of very minute granules; striae slender, deeply impressed, impunctured; third interstitial space with three nearly

equidistant punctures, the terminal one much the largest, with minute elevated centres; tip very obtusely sinuous; *tarsi* dull rufous.—Length less than two fifths of an inch.

Taken by William Bennett, during his stay in Mexico with Mr Maclure.

It will be obvious from this description, that our species does not well correspond with the S. *pumicatus*, Panz., but agreeably to the tables given by Dejean it cannot be placed elsewhere. It is larger and more dilated than pumicatus, the basal joint of the antennae is shorter, the palpi are not so obtusely truncated, and its habit and appearance quite different.

PELOR, *Bonelli.*

P. *avidus*, Say, (Zabrus) Journ. Acad. Nat. Sc.

AMARA, *Bonelli.*

In my paper on the Carabici and Hydrocanthari, published in the Trans. Amer. Philos. Soc. vol. 2, new series, as above quoted, I described five species of the United States, under the genus Feronia, agreeably to the arrangement of Latreille, indicating, however, at the same time, that they belonged to Bonelli's Amara. But Dejean and many other distinguished entomologists give the group a separate station.

1. A. *musculis*, Say, (Feronia) Trans. Amer. Philos. Soc.—Dej. Sp. Gen. 3, 477.

2. A. *basillaris*, Say, (Feronia) Trans. Amer. Philos. Soc.

3. A. *impunctícollis*, Say, (Feronia) Trans. Amer. Philos. Soc. Dejean thinks it the same as A. *trivialis*, Duftschm., but I have not yet compared it.

4. A. *angustata*, Say, (Feronia) Trans. Amer. Philos. Soc.

5. A. *obesa*, Say, (Feronia) Trans. Amer. Philos. Soc.

6. A. *impunctata*, Say, (Feronia) Trans. Amer. Philos. Soc.. Dejean thinks it the same as the familiaris, Duftschm., but I have not satisfactorily compared them.

The following species appear to be new.

7. A. *dolosa*. Black; oblique line near the thoracic angle obviously impressed; elytra with impunctured striae.—Inhab. Mexico.

Body black, impunctured; *head* with the impressed lines between the antennae obsolete: *antennae* fuscous, joints rather short, three basal joints honey-yellow; *palpi* black piceous; *thorax* rather short, lines not deeply impressed; oblique line near the posterior angles very distinct: hair of the lateral margin situated at one third of the distance between the anterior and posterior angles, another hair at the basal angle: *elytra* with impunctured capillary striae; interstitial lines depressed, hardly convex: *feet* piceous black; *tibiae* and *tarsi* a little paler.—Length nearly three tenths of an inch.

Resembles A. *impunctucollis*, Nob., and A. *communis* and *vulgaris*, Fabr., but differs from all in colour, greater brevity of the thorax, more robust form, &c. Viewed in a particular light, a tint of blue may be, with some difficulty, detected.

8. A. *scra*. Greenish black; three basal joints of the antennae yellowish.—Inhab. Mexico.

Antennae fuscous: first, second, third and base of the fourth joints yellowish: *thorax* impunctured, basal angles rectangular, with the oblique line not deeply impressed: basal lines rather deep, abbreviated, definite, impunctured; dorsal line distinct; *elytra* with the striae impunctured, acutely impressed; basal abbreviated striae rather long; interstitial lines with a very slight convexity, nearly flat; near the lateral tip slightly and rather acutely sinuated: *tibiae* and *tarsi* piceous.—Length three tenths of an inch.

The thorax is longer than that of the preceding species, and the interstitial lines are a little convex, which will readily distinguish it from A. *impunctcollis*, N. The colours of the antennae as strongly contrast, as those of A. *vulgaris*, F.

9. A. *furtiva*. Pale; thorax punctured at base: elytra with punctured striae.—Inhab. Indiana.

Body honey-yellow, more or less tinged with dusky: *antennae*, *palpi* and all beneath paler; *head* with the frontal impressed lines dilated, distinct; *thorax* a little contracted at base, the posterior angles slightly excurved and acute; dorsal line well impressed, particularly behind the

middle; basal lines deeply impressed and definite, punctured; impressed lines of the posterior angles, distinct and rather deep, punctured; base punctured; *elytra* with punctured striae; the punctures orbicular and close set; near the tip obtusely, but not deeply sinuated.—Length less than two fifths of an inch.

Resembles the A. *fulva*, Ill., particularly in the form of the thorax. The colour has sometimes a very slight metallic tinge, but never so obvious as in the *fulva*.

10. A.? *grossa*. Alternate interstitial spaces punctured.—Inhab. N. W. Territory.

Body short, robust, convex, blackish piceous; *head* ——; *thorax* convex, descending much each side, transverse, oblong-quadrate; dorsal line almost obsolete; anterior transverse line hardly obvious; basal margin depressed and somewhat rough; lateral margin depressed, but not elevated except near the posterior angles lightly; *elytra* with a sinus near the tip; striae well impressed, impunctured; interstitial spaces with from five to eight distinct punctures on the third, fifth and seventh spaces; marginal series of punctures small, almost indistinct.—Length of thorax and abdomen nine twentieths of an inch.

This species I found in the north western part of the United States when traversing that country with Major Long's party. It is a remarkable insect, readily distinguishable by the peculiar puncturing of the elytra. I have two specimens, both of which are mutilated, so that I am not perfectly sure it belongs to this genus.

DAPTUS, *Dej.*

D. *incrassatus*, Dej. This insect appears to be rare. I obtained an individual in Pennsylvania. It has not yet occurred to me in the western states.

CRATACANTHUS, *Dej.*

C. *Pennsylvanicus*, Dej., is a common insect. But it is not confined to Pennyslvania, as the name would seem to imply; it is abundant in this state, and I obtained three specimens near the Rocky Mountains;

these are somewhat smaller than the inhabitants of this vicinity, and of a paler colour.

PANGUS, *Zeigl.*

P. *caliginosus*, Fabr. Dejean refers this large species to Pangus, which he makes a division of his genus Selenophorus.

ANISODACTYLUS, *Dej.*

1. A. *dilatatus.* Black; thorax transverse quadrate, not contracted behind; impunctured; first joint of the antennae testaceous.—Inhab. Mexico.

Body black, impunctured; *antennae* not reaching the base of the thorax; first joint pale testaceous, second joint darker, remaining joints blackish; impressed frontal lines very distinct; *thorax* without any appearance of puncture, not narrowed behind; lateral edge regularly arquated; posterior angles rounded; dorsal line not very obvious; basal indentations much dilated, not profound; minute longitudinal lines or wrinkles at the middle of the base, and less obvious ones on the anterior margin; *elytra*, striae profound, impunctured; interstitial spaces depressed; tip very obtusely sinuous; *abdomen*, terminal and anal segments above punctured.—Length less than half an inch.

This species is closely allied to the A. *caenus*, Say, and its form is perhaps still more like that of an Amara in being more obtuse and robust. It is much larger and more rounded behind. It was taken in Mexico by William Bennett, and was presented to me by Mr Maclure.

2. A. *Baltimoriensis*, Say, (Harpalus) Trans. Amer. Philos. Soc.; Dej. Spec. A very bad name, as the species is found as well in Indiana as in Baltimore; but it is a specific name, and therefore unchangeable.

3. A. *rustieus*, Say, (Harpalus) Trans. Amer. Philos. Soc.; Dej. Spec.; A. *merulus?* Germar.

4. A. *caenus*, Say, (Harpalus) Trans. Amer. Philos. Soc.; Dejean Spec.

5. A. *agricolus*, Say, (Harpalus) Trans. Amer. Philos. Soc.; Dej. Spec.

6. A. *carbonarius*, Say, (Harpalus) Trans. Amer. Philos. Soc.

7. A. *laetus?* Dej. An insect is found in this vicinity, which I have referred, but very doubtfully, to the laetus. Its characters correspond to the description, but if it be indeed the same, a very important character must be added. My specimen is a male. The alternate interstitial spaces are cupreous, and the remaining part is green. It has a very much dilated. slight indentation behind the middle of the elytra. and a smaller one nearer the tip.

OPHONUS, *Zeigl.*

O. *interstitialis*, Say, (Feronia) Trans. Amer. Philos. Soc. Since described by Dejean under the name of Harpalus *obscuripennis.*

HARPALUS, *Latr.*

1. H. *vulpeculus*, Say, Trans. Amer. Philos. Soc. Since described by Dejean under the name of *nigripennis.* It differs however from his description, by having an impressed puncture on the third elytral stria : but I have a variety altogether destitute of the puncture.

2. H. *viridis*, Say, Trans. Amer. Philos. Soc. Subsequently described by Dejean under the name of *assimilis.*

3. H. *Mexicanus*, Dej. Sp. Gen. This appears to be a common species. Mr Maclure has recently sent me specimens by William Bennett, and I obtained it also in that country.

4. H. *iricolor*, Say, has been recently described by Dejean under the name of *dichrous.* I obtained a specimen formerly, with a collection I purchased in New York, as having been received from New Haven, and I have since found two in Indiana.

5. H. *terminatus*, Say, (Feronia) Trans. Amer. Philos. Soc. Dejean, Sp. Gen., refers this species to the present genus. The anterior pairs of the tarsi of the male are clothed with dense hairs beneath.

6. H. *amputatus.* Elytra greenish, truncate at tip.—Inhab. N. W. Territory.

Body blackish ; *head* with the frontal lines rather slightly indented : *antennae*, *palpi*, *tibiae*, and *tarsi* honey-yellow, the tibiae darkest ; *thorax* with the basal angles rounded ; edge obscure rufous ; dorsal line

obsolete, or slightly impressed; basal lines substituted by dilated, slightly indented spaces, in which are numerous small punctures: posterior lateral margin with small punctures; basal margin obsoletely tinted with greenish; *elytra* with impunctured striae, more or less green, sometimes bright green; suture, outer and terminal edges obscure rufous: tip widely and somewhat obliquely truncate.—Length less than two fifths of an inch.

Var. *a*. Elytra reddish brown, with hardly any tint of green.

Readily distinguished by the truncated appearance of the tip of the elytra, from H. *aeneus*, F., which has the elytra decidedly sinuate at tip, and even abruptly so.

7. H. *ocreatus*. Black green: impunctured: feet pale yellowish.—Inhab. Mexico.

Body very dark green, impunctured; *head* black, with hardly any appearance of green; *antennae* honey-yellow, the joints, excepting the first and second, with darker centres: *palpi* and base of the *mandibles* honey-yellow; *labrum* with a slight projecting angle in the middle of the emargination; *thorax* blackish green, hardly narrower at base: dorsal line indistinct, but more obvious in the middle: basal indentations dilated not profound; lateral edge dull honey-yellow; posterior angles obtuse; *elytra* obviously tinged with green: a little wider at base than the thorax; *striae* very slender, impunctured: interstitial spaces flat, third space with a puncture at three fourths the length from the base; lateral edge near the tip and suture near the tip obscurely piceous: tip deeply and rather obtusely sinuous; beneath black, the greenish tinge hardly perceptible; *feet* yellowish; *tarsi* rather darker: first joint of the anteriors of the male somewhat smaller than the second; these tarsi have beneath close set hairs.—Length over seven twentieths of an inch.

This species has almost the Amara like form of some species of Anisodactylus, in which genus I should have placed the species but for the angle in the emargination of the mentum. It is very closely allied to *terminatus*, Say, but is rather more robust, the head and thorax are differently coloured, the posterior lateral margin is more depressed, &c.

It must resemble closely H. *agilis*, Dej., of which it may possibly be a variety.

It was obtained by William Bennett, and presented to me by Mr Maclure.

STENOLOPHUS, *Meg.*, *Dej.*

S. *cinctus*. Dark piceous; margin and suture of the elytra honey-yellow; feet pale yellow.—Inhab. Massachusetts.

Body blackish piceous; *antennae* fuscous, three basal joints and *labrum* honey-yellow; *mandibles* piceous, black at tip; *thorax* rather convex, a little narrowed behind gradually; base rectilinear, each side a little arquated to the posterior angles, which are obvious but almost rounded; lateral edge but slightly arquated, nearly rectilinear behind the middle, near the posterior angle hardly perceptibly excurved; dorsal line very distinct; anterior transverse line distinct, obtusely arquated; basal lines so much dilated as to extend to the lateral angle, including a few sparse, profound punctures; base and tip and exterior edge paler piceous; *elytra* with impunctured, deeply indented striae, less profound towards the margin; rudimental striae none; sutural interstitial space paler piceous; dilated exterior margin honey-yellow; lateral series of punctures, with the exception of a small one, widely interrupted in the middle; *feet* pale yellow.—Length less than three twentieths of an inch.

For this insect I am indebted to Dr Harris. On a cursory examination I considered it identical with S. *ochropezus*, Say, notwithstanding its great inferiority of size, which may at once distinguish it. The thoracic posterior angles are much more obtusely rounded in that species, the punctures of the basal lines are much more numerous and extend nearly to the basal middle, the dorsal line is obsolete, &c.

ACUPALPUS, *Latr.*, *Dej.*

1. A. *partiarius*, Say, (Trechus) Trans. Amer. Philos. Soc. Since described by Dejean under the name of *testaceus*. I have recently received a specimen from Louisiana, for which I am indebted to Mr J. Barabino.

2. A. *conjunctus*, Say, (Trechus) Trans. Amer. Philos. Soc. Since described by Dejean under the name of *misellus*.

3. A. *rupestris*, Say, (Trechus) Trans. Amer. Philos. Soc. Since described by Dejean under the name of *tantillus*.

4. A. *debilipes*. Piceous black; base of the antennae and feet pale yellowish.—Inhab. Indiana.

Body very dark piceous, almost black; *head* impunctured; between the antennae on each side a dilated very obvious indentation; *antennae* brown, three basal joints yellowish; *mandibles* at tip black; *palpi* yellowish, rather pale; *thorax* widest before the middle, gradually narrowed, by a regular arquation of the edge, to the base; basal angle obtusely rounded; anterior and posterior margins on their middles obviously piceous; dorsal line well impressed, very distinct, not abbreviated; anterior transverse line obvious in all its length, arquated; basal lines dilated, orbicular, obvious, with a few, small, sparse punctures within or rather near the base; *elytra* with slender striae; interstitial spaces flat, third with a puncture between the middle and tip; marginal and sutural edges towards their tips piceous; rudimental striae none, but instead of it is a puncture at base of the second striae: *feet* pale yellow.—Length less than three twentieths of an inch.

5. A. *obsoletus*. Dark piceous; striae of the elytra obsolete.—Inhab. Mexico.

Body dark piceous, impunctured; *antennae*, *labrum* and *palpi* honey-yellow: *thorax* with pale piceous anterior and basal margins; lateral margin with eight or nine hairs; dorsal line almost obsolete; basal impressions dilated, oval; *elytra* with the basal, exterior and apicial margins paler piceous; *striae* obsolete, excepting the subsutural and lateral ones; a series of large punctures behind the middle of the exterior margin; *feet* pale honey-yellow.—Length one fifth of an inch.*

* Count Dejean has done me the favour to send me the four volumes of his "Species des Coleopteres," which have now been published. This work is indispensable to all those who study the Coleoptera. It contains the descriptions of a great number of North American species, and has greatly facilitated my examination of the insects described in the preceding part of this paper.

BEMBIDIUM, *Latr.*

1. B. *inaequale*, Say, Journ. Acad. Nat. Sc. Vol. 3. p. 151. Very closely allied to paludosum, Panz., and may possibly be only a variety of that European species, nevertheless it is somewhat smaller, the thoracic impressed lines are more distinct, particularly the transverse basal one, and the striae of the elytra are more dilated and the punctures more obvious. As it is the analogue of paludosum, it belongs to the genus Bembidium, as at present restricted.

2. B. *honestum*, Say, Trans. Amer. Philos. Soc. When describing this species I stated that the elytral striae are "not *obsolete behind.*" This may be corrected by substituting the phrase "*almost obsolete behind.*" The punctures of the striae are large and obvious at base, but are obsolete, or rather entirely wanting on the posterior third. The exterior margin and epipleura are blackish green.

3. B. *punctatostriatum*, Say, Trans. Amer. Philos. Soc. The posterior angles of the thorax are very acute; the basal and anterior margins are slightly longitudinally wrinkled, the dorsal line transversely wrinkled on its margins, and the basal lines are obliquely wrinkled; the sides of the thorax are also somewhat undulatedly wrinkled. The third interstitial space is much wider than the others, and the posterior puncture is much nearer to the anterior puncture than to the tip.

4. B. *laevigatum*, Say, Trans. Amer. Philos. Soc. The basal thoracic lines are much dilated.

5. B. *coxendix*, Say, Journ. Acad. Nat. Sc. 3, 151. *Antennae* with the three basal joints and base of the fourth pale yellowish; *palpi* (in the dry state) pale yellowish, dusky at tip; face with an impressed line each side; *vertex* longitudinally wrinkled; *thorax* with the posterior margin a little depressed; surface somewhat wrinkled transversely and at base longitudinally; basal indentations dilated, minutely rugose; *elytra* with the anterior and posterior discs obscurely testaceous.—I am not so fortunate as to possess definitions of the several genera into which this genus, as originally constructed by Latreille, has been recently divided; but I rather think, by analogy, that the present species is a *Peryphus*, Meg.

6. B. *dorsale*, Say, Trans. Amer. Philos. Soc. This species varies considerably. The dorsal line is more or less obvious, and sometimes rather deeply impressed. In one specimen is a slight appearance of puncturing on the middle of the thoracic base. The thorax is more or less engraved with undulated lines, which are sometimes almost imperceptible. Perhaps a Notaphus, Meg.

7. B. *tetracolum*, Say, Trans. Amer. Philos. Soc. Allied most closely to Peryphus rupestris, Illig, than which it is somewhat larger.

8. B. *postremum*. Blackish; elytra brownish, obscure yellowish at tip.—Inhab. Pennsylvania.

Head greenish black; *face* with an indented line each side, between which and the eye is a large orbicular puncture; *antennae* fuscous, piceous at base; *palpi* dark honey-yellow; *mandibles* at base piceous; *thorax* bronze black, very obscurely piceous on the middle of the anterior margin; contracted behind; posterior angles obtuse-angular; dorsal line impressed; anterior transverse very obvious, arquated; basal lines dilated, suborbicular; basal margin with slight inequalities or punctures between the basal lines; a slightly elevated line on the lateral margin, forming a groove with the slightly elevated edge, more obvious near the angle and becoming obsolete before; *elytra* very dark honey-yellow, or brownish, much paler at tip; striae somewhat dilated, and with dilated, quadrate, profound punctures; striae more slightly impressed towards the tip, and the punctures obsolete; third interstitial space a little broader than the others, with a puncture before the middle and another equidistant behind the middle, both nearer the third stria; wings perfect; beneath black; *abdomen* tinged with piceous; *feet* pale yellowish.—Length one fifth of an inch.

Resembles *tetracolum*, Say, but the elytral striae are more dilated. the punctures of the third interstitial space are more anterior and the posterior pale spot of the elytra is quite terminal. Belongs to the genus Peryphus, Meg.

9. B. *nigrum*, Say, Trans. Amer. Philos. Soc. The striae are so much dilated that no punctures are visible on the third interstitial space.

10. B. *sigillare*. Cupreous; elytra with two, dilated, subquadrate green spots on each; fourth stria rectilinear.—Inhab. Missouri.

Body bronzed-cupreous, somewhat polished; *head* greenish each side and before; an impressed line near the eye, between which and the eye is a dilated puncture; *antennae* blackish green, first joint beneath piceous; *palpi* black piceous, tinged with green; *thorax* rather broader behind than before; posterior angles acute; lateral edge excurved behind; dorsal line distinct, but not deeply impressed, not abbreviated; basal lines dilated; *elytra* with punctured striae, punctures almost obsolete towards the tip; fourth stria not undulated; third interstitial space as broad as the seventh and with two dilated impressed subquadrate spots, green, and including each a puncture, and placed near the middle; *beneath* dark green; *feet* blackish green; *tibiae* and base of the *thighs* piceous greenish.—Length less than one fourth of an inch.

I obtained this species during the journey of Major Long's party to the Rocky Mountains. It is very distinct from the *inaequale*, Say, which it somewhat resembles, by many characters. That of the rectilinear fourth stria of the elytra, is an obvious one.

11. B. *semifasciatum*. Greenish black; elytra each with four spots; third interstitial space two-punctured.—Inhab. Mexico.

Head metallic green; two impressed lines between the antennae very distinct; antennae dull piceous; *labrum* and *palpi* blackish; *thorax* metallic green with a slight tinge of cupreous; dorsal line slender; lateral indentation of the base obvious, bounded near the angle by a carinate, abbreviated line; lateral edge with a hair rather before the middle and another at the posterior angle, not arquated from behind the middle to the basal angle; *elytra*, blackish with a slight cupreous tinge, with well impressed punctured striae, distinct to the tip; interstitial lines depressed, plane; third line with a transverse indentation before the middle and a less distinct one behind the middle; a dull honey-yellow dot on the middle of the base, a semifascia before the middle, another behind the middle, and an irregular apicial spot; beneath black; *feet* piceous.—Length over three twentieths of an inch.

Resembles N. *ustulatus*, Fabr. and therefore probably is a Notaphus, Meg.

12. B. *oppositum*, Say. Resembles the maculatum, Gyll., and pro-

bably belongs to Lopha. The sutural stria is impressed from the middle of the tip. It is somewhat bronzed.

13. B. *ephippiatum.* Pale testaceous; elytra with punctured striae and a large common blackish spot.—Inhab. Indiana.

Body pale testaceous or honey-yellow; *antennae* paler than the head, a little darker towards the tip; *palpi* colour of the antennae; *thorax* widest before the middle, gradually contracting by an almost rectilinear, but hardly perceptibly concave line, to the basal angle, which is rectangular; dorsal line but slightly impressed, obsolete before: basal lines hardly distinct from the depressed basal margin, which is minutely wrinkled; *elytra* with impressed, punctured striae, obsolete at tip; seventh stria wanting; third interstitial line with two small orbicular punctures, one before the middle and the other a little behind the middle; a very large common blackish spot on the middle, within which the suture is reddish brown; suture behind the spot blackish; a small, obsolete blackish spot at base each side of the scutel; *feet* pale yellowish.—Length one tenth of an inch.

At first view it resembles *proximum*, Say, both as respects size and colour, but it may be distinguished by many characters, of which the punctured striae is one.

14. B. *tripunctatum.* Piceous; elytra with five abbreviated striae; thorax three-punctured between the dilated basal lines.—Inhab. Indiana.

Body piceous; head and thorax darker; *antennae* light brownish, paler at base; *palpi* pale yellowish; *thorax* with the dorsal line distinct, terminating on the basal margin in an impressed puncture, on each side of which is another rather smaller puncture; basal lines much dilated, deeply undulating the posterior edge of the thorax; *elytra* with about five, rather obtuse striae, not extending to the tip or base; sides destitute of striae excepting a marginal interrupted one; an indentation each side of the scutel and on the humerus.—Length four fifths of an inch.

The dilated basal thoracic lines deeply indenting the posterior edge, together with the three intervening punctures, will readily distinguish

this species. At first view it resembles B. *flavicaude*, Say, but is more highly polished.

15. B. *incurvum*. Piceous; elytra with a honey-yellow vitta from the humerus, a little dilated at its termination before the tip.—Inhab. Indiana.

Body piceous; *head* blackish-piceous; *antennae* honey-yellow; *thorax* a little contracted gradually to the base; dorsal line slender and slightly impressed; basal transverse line deeply impressed, with numerous minute wrinkles; basal lines dilated, undulating the posterior edge; *elytra* polished, with a profoundly impressed, somewhat dilated, simple, sutural stria; the second stria obsolete; an interrupted stria on the lateral margin; a dilated indentation each side of the scutel, and a smaller one on the humerus; a dilated vitta from the humerus, near its tip, curves a little towards the suture, and is in that part a little more dilated: *venter* black piceous; *feet* honey-yellow.—Length over four fiftieths of an inch.

Resembles the preceding, but is destitute of the three punctures at the base of the thorax, and with that species belongs probably to Peryphus, Meg.

Of the genus Bembidium, Latr., I have twenty-two described species natives of North America.

DYTISCUS, *Linn.*, *Latr.*

1. D. *confluens*. Blackish brown, margined with honey-yellow; four exterior grooves of the elytra nearly or quite geminately confluent at tip.—Inhab. Maine.

Body blackish brown with a green reflection, covered above with minute punctures; *head* dark green, with a frontal rufous semicircle, divaricating at its anterior tips into a more dilated spot between the canthus of the eye and the nasus, which is yellowish, excepting the anterior edge; above the nasus a transverse impressed line, ending each side in a more dilated spot; *thorax* margined all around with honey-yellow; anterior margin with a somewhat double line, of which the posterior one is obsolete; posterior margin with the yellow colour, near the lateral angles, contracted or almost obsolete; *elytra* with

about ten grooves which extend three fourths the distance to the tip, the four exterior interstitial spaces confluent, or nearly so, by twos; lateral margin not dilated, honey-yellow with an obsolete branch towards the tip proceeding obliquely to the suture; beneath honey-yellow, sutures more or less margined with black.—Length one inch and a half.

This fine large species was sent me by Dr E. Holmes of the Gardiner Lyceum, together with many other interesting objects of natural history. It is more than double the size of D. *fasciventris*, Say, and may also be distinguished from that species by the confluent termination of the four exterior grooves of the elytra in the female. It is less dilated than the *latissimus*, Fabr., and is destitute of the wide elytral margin.

2. D. *habilis*. Blackish olivaceous; thorax and elytra margined with yellow; elytra with three series of punctures.—Inhab. Mexico.

Body oval: above with minute, distant punctures; *head* with a frontal rufous angular line or semicircle, divaricating at its anterior tips into a more dilated spot between the canthus of the eye and the nasus, which is yellow, excepting the anterior edge; above the nasus on each side is an orbicular, punctured indentation; front each side at the eye with an indented, punctured line; *thorax* with a broad yellow margin; dorsal line acute, distinct, not extending upon the margins; a line of impressed punctures on the anterior margin interrupted in the middle; lateral margin not at all depressed; *scutel* honey-yellow on the posterior submargin; *elytra* with three series of impressed punctures: the exterior series less distinct; general puncturation near the tip much larger and more obvious; posterior margin yellowish with an obsolete undulated branch proceeding obliquely towards the tip; beneath varied with blackish, piceous and yellow.—Length one inch.

A male of this species was taken by William Bennett in the river beyond Vera Cruz, and, together with the two following, presented to me by Mr William Maclure. It is allied to the D. *marginalis*, F., but that species in form approaches the ovate; the present also is much smaller and oval.

3. D. *bimarginatus*. Black; head and thorax rufous; elytra with a yellow vitta on the lateral submargin.—Inhab. Louisiana.

Body oval, blackish; *head* honey-yellow, posteriorly black; *palpi* and *antennae* yellowish; *thorax* honey-yellow; posterior margin black, which is more dilated on the middle half; *elytra* with three series of distant slight punctures; on the lateral submargin a yellow vitta, which passes a short distance on the humeral base, and posteriorly diverges a little from the margin, attenuates, and does not reach the tip; margin and epipleura dull rufous, not reaching the tip; beneath piceous black; *pectus* and *anterior feet* yellowish; terminal joints of the *tarsi* piceous; *posterior pairs of feet* piceous; intermediate thighs dull yellow; *venter* each side with obsolete piceous spots.—Length less than half an inch.

For this species I am indebted to the politeness of Mr J. Barabino, who sent it to me from New Orleans.

COLYMBETES, *Clairv.*

1. C. *taeniolis*, Say, (Dytiscus) Trans. Amer. Philos. Soc. In Mexico is a variety, being smaller. The specimen is a male, and proves that the species must be placed in the present genus. It was taken in the river beyond Vera Cruz.

2. C. *gutticollis*. Thorax yellowish with four black spots; head black, anteriorly and band of the vertex yellow.—Inhab. Mexico.

Head black; a transverse yellowish band between the nearest points of the eyes; a dilated yellowish triangle occupying all the anterior part of the head, the apex being at the middle of the face; *antennae* and *palpi* honey-yellow, dusky at their tips; *thorax* honey-yellow, anterior margin blackish; posterior margin dusky; four large black spots in a transverse series, the two intermediate ones nearer together; *elytra* honey-yellow with minute black points more or less crowded so as to give a dusky, sometimes almost blackish appearance; lateral margin destitute of black punctures, but with a black line on the posterior curvature; at base, particularly the humeral base, destitute of the black punctures; three regular series of small black dots; beneath black;

pectus, *feet* and *epipleura* yellowish.—Length over two fifths of an inch.

Taken in the river beyond Vera Cruz.

It is about the size of the C. *adspersus*, F., which it considerably resembles, if we except the thoracic black dots.

3. C. *fenestralis*, Say, Trans. Amer. Philos. Soc. Since described by Germar under the name of *biguttulus*, Sp. Insect., p. 29.

4. C. *interrogatus*, Fabr. Syst. Elent. C. *venustus*, Say, Trans. Amer. Philos. Soc. When describing this species I stated that it "may probably prove to be the *interrogatus* of Fabricius." Of this I have now so little doubt, that I venture to reject the name I then provisionally gave, and to adopt the true or anterior name. Dejean is also of the opinion that it is the *interrogatus*, F. Sturm, however, considers it distinct.

COPTOTOMUS, *Say*.

Tarsi distinctly five-jointed; basal joints of the anterior pair of the male subequally dilated or gradually tapering; posterior nails appressed together and apparently single; posterior feet natatory, base of the thighs naked; antennae eleven-jointed, at least as long as the head and thorax, filiform; scutel distinct; terminal joint of the palpi somewhat compressed at tip and emarginate.

Observations—This genus differs from other genera of this family in the character of the emarginate palpi, excepting the genus Noterus, which is destitute of an apparent scutel and the emargination of the palpi is confined to the labial. The name is derived from the words *copto* I cut, and *tome* joint or articulation, in allusion to the form of the palpi.

C. *serripalpus*. Yellowish; elytra brownish varied with whitish.—Inhab. Mexico.

Body oblong-oval, honey-yellow; head black on the posterior margin: *labial palpi* with the penultimate joint crenate or bituberculate before; *thorax* on the middle of the anterior and posterior margins broadly black; *elytra* brownish, with very numerous, minute honey-yellow

points; two very slightly impressed striae, with punctures hardly distinguishable from minute inequalities of the surface, and an indistinct part of a series of hardly impressed punctures each side; from the base near the scutel proceeds a whitish broad vitta one fifth of the length of the elytra, bifid at tip; from the humeral base to the tip proceeds a broad, interrupted and somewhat irregular vitta also whitish; *venter* piceous.—Length less than three tenths of an inch.

This insect was obtained on the estate of the Conde del Regla about 10 leagues N. E. of the city of Mexico by William Bennett, and presented to me by Mr William Maclure. It cannot be the Dytiscus circumscriptus, Germ., which is "breviter ovali."

LACCOPHILUS, *Leach.*

L. *maculosus*, Say, Trans. Amer. Philos. Soc. Since described, by Germar, also under the name of *maculosus*, Sp. Gen., p. 30.

HYPHIDRUS, *Latr.*

H. *punctatus*, Say, (Laccophilus) Journal of the Acad. Nat. Sc.

HYDROPORUS, *Clairv.*

1. H. *bifidus*. Elytra with a subsutural, impressed, punctured stria.—Inhab. Mexico.

Body black; *head* with much-dilated indentations between the eyes; a longitudinal honey-yellow line, more dilated before; *antennae* yellowish, dusky at tip; *thorax* with a submarginal honey-yellow band before having three processes, one in the middle, and one, rather more dilated, on the lateral margin, not reaching the posterior edge; *elytra* with a very distinct, punctured, impressed, subsutural stria, and about two other hardly obvious ones near the middle; bifid yellowish lines at base near the tip; *feet* dark honey-yellow.—Length less than one fifth of an inch.

This species and the two following were taken by William Bennett in a small river beyond Vera Cruz, and were presented to me by Mr Maclure.

2. H. *nudatus*. Beneath black; feet yellowish; thorax and head

on their disks yellowish; elytra blackish with lines and tip yellowish. —Inhab. Mexico.

Head with numerous deep punctures, honey-yellow on the disk, blackish each side and behind; *antennae* pale yellowish, dusky at tip; *thorax* with numerous deep punctures, more dense and obvious towards the base, honey-yellow, anterior and posterior margins dusky; *elytra* brownish-black, with numerous, profound, approximate punctures; striae not distinct, but traces of two may be discovered near the base; about four more or less confluent lines at base, irregular ones each side and tip dull whitish yellow; beneath black, pectus yellow; *feet* honey-yellow.—Length over three twentieths of an inch.

3. H. *sericatus*. Yellowish; elytra blackish with abbreviated lines and margin dull yellowish.—Inhab. Mexico.

Dull honey-yellow, somewhat sericeous above; *head* with a dilated, not profound, indentation each side, and numerous small punctures; *antennae* also honey-yellow; *thorax* a little dusky on the anterior and posterior margins, with numerous, small, slightly impressed punctures; *elytra* dark brownish, almost black, more obviously sericeous than the thorax; striae none; lateral margin dull honey, dilated near the base into a band of about four abbreviated, unequal, longitudinal lines, excepting the inner one, not reaching the base, another somewhat similar band behind the middle and slight double dilatation at tip of the same colour.—Length less than one fifth of an inch.

This species was obtained in the same locality with the preceding. It is closely allied to *undulatus*, Say, but is more sericeous, the elytral lines are not so dilated or confluent, &c.

4. H. *interruptus*. Black; feet, frontal line, three thoracic spots, and many elytral abbreviated lines yellowish.—Inhab. Pennsylvania.

Body blackish; *head* with a slight piceous tinge; an anterior honey-yellow triangular spot, the superior angle near the vertex; *antennae* pale yellow, dusky at tip; *thorax* obsoletely tinged with piceous; a lateral irregular spot, and a dorsal, longitudinal, somewhat fusiform one, honey-yellow; *elytra* with an oblique impressed line at the inner angles, a slightly impressed subsutural stria, and an obsolete one on each side of the middle; lateral margin with two slender oblique branches before

the middle, slender subsutural vitta exterior to the stria, interrupted line or two along the middle, a small spot behind near the middle and about two transverse series of two or three short lines, dull honey-yellow; beneath black; *pectus*, *feet* and *epipleura* yellowish.—Length over three twentieths of an inch.

5. H. *discicollis*. Reddish brown, somewhat sericeous, minutely punctured, middle of the thorax without punctures.—Inhab. N. W. Territory.

Body entirely dark reddish brown, with minute punctures; *head* ———; *thorax* with the disk impunctured, polished and a little more convex; elytra darker than the thorax, more obviously sericeous; lateral margin a little paler; spot at the tip dull yellowish: *postpectus* black piceous.—Length three twentieths of an inch.

I obtained an individual of this species during Long's Expedition to the source of St Peter's River, and although it is now mutilated, yet I have no hesitation in giving it as distinct from any other I am acquainted with.

HALIPLUS, *Latr.*

H. 12-*punctatus*, Say. Some specimens were found in Mexico, in the locality above mentioned by William Bennett, and presented to me by Mr William Maclure. They vary a little from those of this region in being very slightly more elongated and larger; but the spots, their arrangement and the sculpture appear to be precisely the same. The species is therefore found over the greater part of North America east of the Rocky Mountains.

NOTERUS, *Latr.*

N. *bicolor*. Honey-yellow; elytra black, punctured.—Inhab. Louisiana.

Head and *thorax* honey-yellow; *eyes* black; *palpi* not deeply emarginate; *elytra* black, punctured; at tip obsoletely piceous, very obliquely and slightly truncate; acute; beneath honey-yellow, or piceous.—Length one tenth of an inch.

For this species I am indebted to Mr Barabino.

HYDROCANTHUS. *Say.*

H. *atripennis.* Ferruginous: elytra black.—Inhab. Mexico.

Head and *thorax* ferruginous; the former with an oblong triangular, obsolete, darker spot between the eyes, and the latter with an impressed line on the lateral submargin: *elytra* blue-black, immaculate, impunctured; *pectus*, as well as the head beneath, dull yellowish: sternum flat, at its anterior tip acute, but not prominent, dusky: *postpectus* blackish, dull yellow at tip; *feet*, intermediate and posterior pairs blackish, slightly varied with piceous.—Length less than one fifth of an inch.

This is the second species of this genus: the first I published in the Trans. Amer. Philos. Soc. vol. 2, new series. The genus is allied to Noterus, Latr., but the labial palpi are much more dilated, and have no appearance of emargination.

GYRINUS. *Linn.*

1. G. *emarginatus*, Say, Trans. Amer. Philos. Soc. Since described by Germar under the name of *vittatus*, Spec. Nov.

2. G. *analis*, Say, Trans. Amer. Philos. Soc. Germar is of opinion that this is the same as *natator*, F.; but on comparison, I find it to differ in many small characters, the most obvious one of which is the colour of the epipleura, that of the *natator* being light piceous, whilst in the *analis* it is of a bronzed black, &c. It is no doubt a closely allied species.

3. G. *obtusus.* Black; feet honey-yellow; behind obtuse.—Inhab. Mexico.

Body black, polished; *head* with two indented dots between the eyes; *mouth* piceous; *antennae* piceous-black; *thorax* with the anterior lateral, posterior lateral and medial impressed lines very distinct: *elytra* obtuse behind and widely truncate; near the tip obviously depressed; punctures well impressed, in regular series, the intervals not impressed; beneath dark piceous, somewhat paler on the edges of the segments; *feet and tip of the venter* honey-yellow.—Length over one fifth of an inch.

It may be distinguished from the *analis* and *limbatus*, Nob., and from the *natator*, Fabr., and *marinus*, Gyl., in being more obtuse behind and the consequent greater truncation of the elytra.

4. G. *parcus*. Black; feet honey-yellow.—Inhab. Mexico.

Body rather robust, black, highly polished; *head* with two indented, oblique lines between and before the eyes; *thorax* with the impressed lines very obvious; *elytra* with very distinct, well impressed series of punctures, the intervals not at all impressed; tips obtusely rounded; *feet* honey-yellow.—Length nearly one fifth of an inch.

In comparison with *minutus*, Fabr., this species is a little longer and much more robust, more highly polished and the impressed lines of the thorax and dots of the elytra are more profound and distinct. It is somewhat smaller than either of those I have before described, and the punctures of the elytra are, notwithstanding, larger.

STAPHYLINUS, *Linn.*, *Grav.*

1. S. *ephippiatus*. Black; elytra rufous.—Inhab. Mexico.

Body black, polished; *head* with a longitudinal, impressed line between the eyes; superior orbits with three or four punctures, above these a lateral series of four or five punctures, and two or three insulated ones. and at base each side a transverse series of four or five punctures; *antennae*, terminal joint obliquely truncate; *thorax* semioval with a few scattered punctures each side, an abbreviated dorsal series of four or five punctures not extending on the posterior third of the length of the thorax; *scutel* densely punctured, black; *elytra* cinnamon-rufous, with very numerous small hairs and slightly impressed punctures; *tergum* a little hairy, deep blackish-blue, iridescent; *palpi* piceous.—Length over half an inch.

This and the following species belong to Family 1st of Gravenh. Monogr.

2. S. *connexus*. Black; elytra and feet rufous.—Inhab. Mexico.

Body black, polished; *head* with punctured orbits and a few scattered punctures each side; *palpi* piceous black; a deep and wide indentation between the antennae, on each side of which above is a single puncture; *thorax* with a series of about five large dorsal punctures

and a few scattered lateral ones; *antennae* cinnamon rufous, with very short hair and minute punctures; *feet* colour of the elytra.—Length over three tenths of an inch.

Resembles the preceding, but the feet are rufous, and the tergum is simply black; the clypeus is a little advanced in the middle. Fam. 1st.

3. S. *iracundus*. Black; elytra rufous; dorsal thoracic punctures three.—Inhab. Indiana.

Head with an orbital puncture and three occipital punctures, of which the anterior one is near the eye and larger; *antennae* piceous; flagellum fuscous; the joints a little broader than long; terminal joint with the apex rather prominent; *mouth* dull piceous; *occiput* with numerous small punctures; *thorax* with three small dorsal punctures, not reaching the middle of the length; lateral punctures about five, the second and fifth placed a little above the straight line; marginal punctures two or three; towards the anterior angles are numerous obsolete discoidal punctures, visible with a strong power; *scutel* glabrous, black; *elytra* rufous, densely punctured, with short prostrate hairs; *tergum* at tip slightly tinged with piceous; *tibiae*, *tarsi* and posterior margins of the ventral segments piceous.—Length over seven twentieths of an inch.

This species seems to have some relation to the *laticollis*, Grav., but the thorax is less dilated, the lateral punctures are much more numerous; the elytra are of a different colour, &c. Fam. 1st.

4. S. *blandus*, Grav. The reddish colour of this handsome insect is of a tint approaching sanguineous.

Gravenhorst had probably old specimens, of which the colour had faded. He describes the feet as "rufo testacei," but in my specimens the tibiae and tarsi are piceous. He says "coleoptera depilia." but my specimens certainly have prostrate hairs on the elytra as well as on the scutel. If this is not in reality Gravenhorst's species, it differs in the exceptions I have stated, and can be called *laetulus*. Fam. 1st.

5. S. *inversus*. Black; dorsal thoracic punctures three.—Inhab. Indiana.

Head with an orbital puncture, and another above the eye; *mouth* and *antennae* piceous; joints of the flagellum rather transverse, point of the last joint not prominent; *thorax* a little narrowed before; dorsal punctures three, the series nearer each other at tip than near the head and hardly reaching the middle of the length; lateral two, remote, with a single puncture midway between the second and the dorsal series; marginal one; *scutel* glabrous, impunctured; *elytra* on the disk with but very few hairs; punctures few, distant, almost to be traced into obsolete series; laterally with small punctures, furnishing short hairs; *terugm* in some lights slightly iridescent towards the tip; beneath very obscurely piceous; *feet* piceous.—Length nearly three tenths of an inch.

The two dorsal series of punctures in other species diverge a little posteriorly, but in the present species they evidently approach towards their posterior termination. Fam. 1st.

6. S. *dimidiatus*. Blackish; elytra and margins of abdominal segments reddish brown; feet pale.—Inhab. United States.

Body piceous black; *head* oval black, with two punctures between the eyes, two punctures on the posterior canthus and five or six behind; *mouth* piceous; *antennae*, first and second joints and part of the third yellowish, or reddish brown more or less pale; *thorax* black, with a tinge of piceous; dorsal series five, and an equal puncture more distant than the others, near the anterior margin, and a little exterior to the line of the series; lateral punctures two, or in a much curved line three; marginal two; *elytra* reddish brown, with prostrate hairs; *abdomen*, segments reddish brown on their posterior margins; *feet* yellowish, or pale reddish brown.—Length nearly one fifth of an inch.

I have found specimens in Pennsylvania and Missouri. The reddish brown colour of the posterior margins of the abdomen, is obvious beneath. Fam. 1st.

7. S. *tachiniformis*. Black; thorax sanguineous; feet piceous.—Inhab. Mexico.

Body black; *head* rather small, oval, polished; with two punctures

each side between the eyes, and eight or ten behind the eyes; *antennae* fuscous, dark piceous at base; *mouth* piceous; *thorax* sanguineous: dorsal punctures five, distant from the base and tip; lateral two: marginal three, placed triangularly; *elytra* with a slight, obscure metallic tinge, with numerous minute punctures furnishing prostrate hairs: *feet* honey-yellow; posterior pair and *tibiae* and *tarsi* darker.—Length one fourth of an inch. Fam. 1st.

S. S. *apicialis.* Black; terminal joint of the antennae and abdomen towards the tip, rufous.—Inhab. United States.

Body black, polished, punctured; *head* with numerous punctures, smooth in the middle; *antennae* with the terminal joint yellowish-rufous; *mandibles* piceous; *palpi* with the terminal joint rather long, slender, piceous; *thorax* with numerous not crowded punctures, with a longitudinal, dilated, glabrous line; *scutel*, punctures minute, dense; *elytra* with a subsutural line and numerous small punctures furnishing hairs; *abdomen* towards the tip dull rufous; *feet* piceous-black.—Length nearly two fifths of an inch. Fam. 3d.

9. S. *cyanipennis*, Fabr. The allied species of the United States was considered by Gravenhorst as a variety only of the European species. I have not at present in my collection the true cyanipennis of Europe to compare, but as Gravenhorst mentions a difference in the size of the head, it may yet prove to be a distinct species, and, if so, the name proposed by Knoch, S. *cyanopterus*, will be an appropriate one.—Fam. 1st.

10. S. *viduatus*, F. This name has the priority over that of maculosus, Grav. Belongs to Family 4. It is singular that Gravenhorst in his revised work the "Monographia" quotes the proper name of this insect and yet retains the synonym of maculosus as the true name, although it was given by himself a year after the Fabrician name.

11. S. *violaceus*, Grav. This species is subject to vary considerably; the "linea media longitudinali laevi" of the head is very commonly obliterated by punctures, and there exists a variety, of which the elytra are tinged with greenish, or are dusky brassy. Belongs to Fam. 3.

12. S. *umbratilis*, Grav. My specimens, five in number, have about

five punctures in the dorsal series, neither of them has four only as stated in the description. Belongs to Fam. 1st.

13. S. *ater*, Grav. In my cabinet I find that I formerly placed this species under the genus Astrapaeus, Grav., from the circumstance that the terminal joints of the palpi are more dilated than in any other species of Staphylinus, that I am acquainted with. The terminal joint of the maxillary palpi, is not longer than the penultimate one, and the diameter is nearly, if not quite as great; the terminal joint of the labial palpi is very obviously, dilated, oval, and its transverse diameter is nearly double that of the last joint of the maxillaries. Still, however, as neither of these joints can be called securiform, agreeably to the essential characters of Astrapaeus, we must agree with Gravenhorst, and return the species to his third family of Staphylinus, from which it certainly differs in the characters above stated.

XANTHOLINUS, *Dahl.*

1. X. *emmesus*, Grav., Coleopt. Micropt. 176, belongs to this genus. It is subject to vary in its colouring; the abdomen is often piceous, and sometimes even still paler.

2. X. *cephalus.* Black; antennae reddish-brown; *elytra* and *feet* honey-yellow.—Inhab. Virginia.

Body black, polished; *head* elongated, sides parallel, punctured; punctures numerous and larger each side, excepting immediately the line behind the eye obsolete on the longitudinal middle; a larger puncture each side at base; and a slight longitudinal indentation on the basal margin; *thorax* as wide as the head anteriorly, becoming gradually a little narrower to the base; a dorsal series of five or six punctures; lateral four or five punctures; on the anterior termination of this series a much dilated slight indentation; marginal puncture one; basal edge each side and lateral edge with a series of punctures; *elytra* honey-yellow, irregularly not profoundly punctured; *pectus* rufous; *feet* honey-yellow; *abdomen* piceous black.—Length one fourth of an inch.

The head is large, longer than the thorax. I obtained it on Chinquotege Island.

3. X. *hamatus*. Piceous; antennae, elytra and feet yellowish.—Inhab. United States.

Head piceous-black, ovate, with sparse, profound punctures, wanting on the longitudinal middle and immediately in a line behind the eye; *antennae* reddish brown, paler at base; *palpi* pale reddish brown; *thorax* rufo-piceous, not distinctly contracted behind; dorsal punctures about ten, with an anterior, nearly parallel, exterior series of about four; lateral series ten or twelve punctured, extending to the locality of the posterior angle, and at its anterior extremity curved outward and backward with four or five additional punctures; *elytra* honey-yellow, sparsely and irregularly punctured; a somewhat elevated line on the sutural submargin; *feet* dark honey-yellow.—Length about one fourth of an inch.

Remarkable for the number of punctures in the thoracic series.

LATHROBIUM, *Grav.*

1. L. *similipenne*. Black; members rufous or yellowish.—Inhab. Mexico.

Body black, polished, hairy, densely punctured; *antennae* reddish brown, first and second joints rufous; *labrum* and *palpi* piceous; *thorax* longer than broad, with a longitudinal glabrous line in the middle, and a glabrous basal margin; *elytra*, terminal edge piceous; *tergum* with more minute punctures; more hairy at tip; *feet* honey-yellow; *thighs* pale yellow.—Length two fifths of an inch.

Like most of the species of this genus the middle of the thorax is destitute of punctures; in this character it also agrees with *Staphylinus violaceus*, Grav.

2. L. *armatum*. Anterior thighs dilated and angulated beneath.—Inhab. Indiana.

Body black, punctured; *antennae* piceous; first joint obconic, not longer than the second and third together, which are equal; 4-10 joints moniliform; last joint ovate acute; *palpi* pale piceous; terminal joint minute, that of the labial longer; *thorax* oblong-quadrate; angles rounded; glabrous line none; *elytra* black piceous, punctures not

deeply impressed; sutural stria distinct; *feet* rufous; *thighs* robust, particularly the anterior, which have a prominent angle beneath near the tip; *tibiae* a little dilated and compressed, obliquely truncate at tip; anterior pair with an obtuse sinus on the inner side; *tarsi*, first joint not longer than the second; penultimate joint a little lobed beneath.—Length about seven twentieths of an inch.

I have obtained but one specimen, which is a male. The above description will show that it differs much from any known species.

3. L. *cinctum*. Black, punctured; antennae and mouth piceous; feet yellowish; posterior margins of the segments of the abdomen rufous.—Inhab. Missouri.

Body black, punctured, hairy; *head* above, punctures dense, distinct, profound, furnishing hairs; on the front sparse, remote; *antennae* pale piceous, first joint nearly one third of the entire length, third joint rather longer than the second and with the others obconic, two terminal ones subglobular; *labrum* very short at tip punctured and setous, emarginate in the middle; *mandibles* piceous, prominent, strongly dentate in the middle; *palpi*, maxillary prominent, pale piceous, terminal joint conic acute, as large at base as the preceding joint, labial pale testaceous, minute, throat with an impressed convex line; *thorax* oblong, not wider than the head, punctures numerous, profound, furnishing hairs, angles rounded; *scutel* impunctured; *elytra*, punctures somewhat transversely confluent, a little hairy; *feet* testaceous, thighs paler, anterior thighs near the tip abruptly narrowed beneath, *coxae* piceous; *pectus* impunctured; *postpectus* and *abdomen* densely and minutely punctured, punctures hairy; segments of the latter with rufo-ferruginous posterior margins.—Length less than two fifths of an inch.

Found near Engineer Cantonment on the Missouri.

4. L. *bicolor*, Grav. This is an abundant species, and widely distributed. Nuttall gave me a specimen which he found in Arkansaw; I have taken them in Missouri, Pennsylvania and very commonly in this state. It varies considerably in its shades of colouring. I have an individual of which the thorax is pale yellow.

5. L. *dimidiatum*. Black; thorax and posterior half of the elytra rufous.—Inhab. United States.

Black; *head* with scattered punctures; *antennae* fuscous; first and second joints, and *palpi* honey-yellow; *thorax* bright rufous, with a dorsal hardly regular stria of seven or eight punctures, the stria somewhat impressed towards the base; lateral punctures many, not crowded; *elytra* with one or two hardly regular striae of punctures, and lateral scattered punctures; an indented subsutural line; bright rufous, the basal half black; *tergum* piceous black; segments dull rufous on their posterior margins; *feet* pale yellow.—Length three twentieths of an inch.

Var. *a*. Punctures of the thorax a little more regular and numerous: black portion of the elytra confined to the basal margin and sometimes obsolete.

Punctured somewhat like *longiusculum*, Grav., but is much smaller and differently coloured.

6. L. *sphaericolle*. Blackish; thorax orbicular, convex; antennae long.—Inhab. Indiana.

Body black piceous; *head* with the carina of the antennae a little elevated, abrupt before; *antennae* much thicker towards the tip, rather longer than to the base of the thorax, first joint hardly longer than the second and third together; fuscous, three basal joints honey-yellow, fourth and terminal joints obscure honey-yellow; larger joints hardly longer than broad; *mandibles* bifid at tip, and with the *palpi* piceous; *neck* distinct; *thorax* nearly orbicular, a little wider before the middle and narrower behind; convex, with sparse black hairs; *elytra* with scattered, upright hairs; subsutural stria deeply indented, particularly towards the base; tip truncate not sinuate; taken together, transverse quadrate; *tergum* black; *feet* yellowish; *thighs* towards the tip piceous. —Length over one tenth of an inch.

The labrum is longitudinally indented in the middle, and at tip is widely, but not very deeply emarginate. The habit differs from that of most of the species, and it cannot be, rigidly speaking, congeneric with *bicolor* and *pallipes*, Grav.

It varies in having the feet entirely yellowish and the tips of the carinae of the head honey-yellow.

7. L. *millepunctatum.* Piceous; with dense, minute punctures; thorax with a glabrous line, rounded behind.—Inhab. Indiana.

Body dull piceous, with very minute, crowded punctures and small hairs; *head* larger than thorax, black piceous, quadrate, almost lobed at the posterior angles; *antennae* and *mouth* paler, rufous; *thorax*, as in Staphylinus, rounded behind and truncate before; a dorsal, slender, glabrous line; *elytra* paler on the humerus; *tergum* dark piceous, posterior margins of the segments and lateral margin paler; beneath honey-yellow, head rufous.—Length less than one fourth of an inch.

The form of the thorax and head is that of a Staphylinus; which together with the dense and minute puncturing, distinguish this species very readily from others.

8. L. *confluentum.* Piceous; densely punctured; thorax short, rounded behind and angulated before each side; head large.—Inhab. United States.

Body piceous; *head* with close set, discoidal punctures; large, ovate or subquadrate; tips of the carinae of the antennae, base of the antennae and palpi paler; *palpi* with the terminal joint very small; *antennae* towards the tip moniliform; *thorax* much smaller than the head, paler on the lateral and posterior margins; punctures confluent longitudinally; anterior margin with a short, abrupt neck; anterior angles angulated; behind rounded; *elytra* with small, irregular punctures, furnishing short hairs, almost obsolete at tip; tip paler; *feet* honey-yellow.—Length less than three twentieths of an inch.

I obtained a few specimens at Chincoteage Island, in dung, October; and one in Indiana.

PINOPHILUS, *Grav.*

P. *latipes*, Grav. In his last work, this author abolishes this genus and unites the species with Lathobium. But I think with Latreille, that it must be a distinct genus.

PAEDERUS, *Fabr.*

1. P. *discopunctatus.* Yellowish; abdomen black at tip.—Inhab. United States.

Body elongated, dull honey-yellow, punctured; *head* with close set. discoidal punctures; subquadrate, obtuse before; *antennae* and *palpi* paler than the head; *thorax* with discoidal punctures; which are close set and like those of the head with a central point; oval, rather smaller than the head; edges a little darker; *elytra* a little paler than the head and thorax, with dense, transversely somewhat confluent punctures; *abdomen* dark honey-yellow, black at tip; *feet* colour of the elytra.—Length less than three twentieths of an inch.

Resembles P. *binotatus*, Say, but may be distinguished at first sight by the more obtuse anterior termination of the head, and by the absence of the elytral spots, which mark that species.

2. P. *cinctus.* Black; tips of the elytra obscure rufous.—Inhab. United States.

Body elongated, black with a slight tinge of piceous, and with discoidal punctures; *head* obtuse before; *antennae* and *palpi* honey-yellow; *thorax* somewhat smaller than the head, a little obovate, obscurely rufous behind; *elytra* obscure rufous at tip; *tergum*, posterior margins of the segments dull rufous; *feet* pale honey-yellow.—Length nearly three twentieths of an inch.

Resembles the preceding in form, and in the obtuse anterior termination of the head.

RUGILUS, *Leach.*

R. *dentatus.* Black; feet pale; elytra dull rufous at tip.—Inhab. United States.

Body piceous black; *head* longitudinally wrinkled; *antennae* and *palpi* piceous; *labrum* large, bidentate in the middle, piceous, rounded each side; *thorax* smaller than the head, longitudinally wrinkled, convex, with a longitudinal, glabrous line; *elytra* with numerous, minute, hairy punctures; a subsutural impressed line; posterior margin dull

rufous, or yellowish; *feet* pale yellowish.—Length over three twentieths of an inch.

Var. *a*. Posterior margin nearly black towards the suture; glabrous thoracic line almost obsolete.

Much smaller than R. *orbiculatus*, Payk., and the wrinkles of the head and thorax are larger and more obvious.

STENUS, *Latr.*

1. S. *geniculatus*. Black; antennae and feet whitish.—Inhab. United States.

Body black, with a very slight cinereous tinge; deeply punctured; *head* with a wide, but not very deep indentation each side of the middle; profoundly punctured; *antennae* whitish; anterior part of the head with short whitish hairs; *thorax* punctured like the head; *elytra* also with profound punctures; *tergum* a deeper black than the elytra; segments with large punctures at base and small ones towards the tip; *feet* yellowish-white; posterior knees blackish.—Length less than one fifth of an inch.

This has been supposed to be the same as the *fuscipes*, Grav., but it is much larger, with pale feet, &c.

2. S. *colon*. Black; elytra with a rufous dot; feet pale beneath.—Inhab. Indiana.

Body black, with large, dense, not very profound punctures; *elytra* with the punctures towards the suture longitudinally confluent; a sublunate or triangular, dull rufous spot rather behind the middle of each elytrum; *tergum* with the punctures not smaller at the posterior margins of the segments; *feet* dirty yellowish; *thighs* blackish above.—Length over three twentieths of an inch.

Much like S. *biguttatus*, Linn., but is much smaller, and the spot of the elytra is placed rather more outward and backward, and is more triangular and emarginate before.

3. S. *stygicus*. Grayish black, immaculate.—Inhab. Missouri.

Body black, with a slight tint of gray; punctures dense, with short, prostrate hairs; *head* obtusely indented each side between the eyes;

thorax broadest a little before the middle; *elytra*, region of the scutel indented; *tergum* of a more unmixed black than the anterior part of the body; *feet* immaculate.—Length nearly three twentieths of an inch.

Resembles *bupthalmus*, Schr., but may be distinguisued by the more obvious indentations of the head.

4. S. *femoratus*. Grayish black; thighs rufous.—Inhab. Pennsylvania.

Body black with a slight tinge of gray; punctures dense, with short, prostrate hairs; *head* obtusely indented each side between the eyes; *thorax* broadest rather before the middle, contracted behind: a slight appearance of indentation behind the middle; *elytra*, region of the scutel a little indented; *tergum* of a more unmixed black than the other part of the body; *anterior thighs* rufous, black at the knee; *posterior thighs* obscure rufous.—Length less than three twentieths of an inch.

5. S. *quadripunctatus*. Black, punctured; thorax hexagonal, inequal.—Inhab. Missouri.

Body deep black, immaculate, profoundly and densely punctured: *mouth* testaceous; *palpi* black; *thorax* hexagonal, the lateral edge projecting into an angle in the middle, disk with four dilated, indented spots, placed in quincunx, with a slightly elevated line between them, one or two obsolete, indented spots near the lateral angle; *abdomen*, *pectus* and *postpectus* impunctured, the former with short hairs: *feet* piceous.—Length more than one tenth of an inch.

Found at Engineer Cantonment. It has a somewhat different aspect from the preceding species. The eyes are not quite so large, and the three last joints of the antennae are not so remarkably larger than the others.

OXYPORUS, *Fabr.*

O. *stygicus*. Black; tarsi rufous.—Inhab. Indiana.

Body black, polished; *antennae* 2-5 joints rufous; *labrum* rufous: *palpi* honey-yellow; *thorax* with the lateral deflected margin indented:

elytra entirely black; a subsutural stria, and an abbreviated one on the middle, near which is another obsolete one, and many rather large distant punctures; exterior margin impunctured; *feet* blackish piceous; *tarsi* pale rufous.—Length three tenths of an inch.

The thorax is somewhat longer than that of *cinctus*, Grav., and the punctures of the elytra are more numerous.

OXYTELUS, *Grav.*

1. O. *sculptus*. Blackish; five lined; elytra rufous; feet pale.—Inhab. Pennsylvania.

Body piceous-black, punctured; *head* indented, with numerous, small punctures above; *mouth* piceous; *antennae* fuscous, piceous at base; *thorax* with five grooves, of which the exterior ones are dilated and not deeply impressed: densely punctured; anterior angles not acute; *elytra* dull rufous, with small hairy punctures; a subsutural impressed line and another from the humerus not reaching the tip; *tergum* black with a piceous tinge; feet yellowish-white; *tibiae* and *tarsi* a little darker.—Length over three twentieths of an inch.

Gravenhorst considered this insect as specifically identical with his *piceus*, but in his remarks on that species he states that "huic Oxytelo alius affinis est, quam D. Prof. Knoch O. sculptus nuncupavit. Differt thorace lateribus subrotundatis, basin versus paulo angustiore, coleoptris breviore et paulo angustiore, fusco seu rufo; coleoptris quadratis, rufescentibus seu piceo-rufo." These differences of character, indicate a difference of species.—It is the Aleochara sculpta of Melsheimer's Catalogue.

2. O. *rugulosus*. Black; longitudinally wrinkled; elytra obscure piceous.—Inhab. Mexico.

Body black, rather short, with numerous punctures, somewhat confluent into longitudinal wrinkles; *head* with three grooves, rather slightly impressed, the lateral ones dilated; *antennae* brown, dull honey-yellow at base; *palpi* dull honey-yellow; *thorax* with three grooves, of which the middle one is wider before and the lateral ones wider behind; each side a little concave, the edge slightly reflected; anterior

angles acute; lateral edge arquated; rounded behind; *elytra* transverse quadrate, blackish piceous; *tergum* with dense minute punctures; *feet* honey-yellow.—Length less than one tenth of an inch.

This does not altogether agree with the var. *a* of the *carinatus* of Gravenhorst and to which he has given the name of insignitus. The present species is proportionally much shorter than the *carinatus*. It is not more than half the length of that species. It is more than probable that the insignitus is also a distinct species.

I obtained three specimens of the rugulosus in Mexico.

3. O. *cordatus*. Black; elytra whitish, with a common brown spot. —Inhab. Virginia.

Body black, with numerous small punctures; *mandibles* piceous: *antennae* pale, towards the tip brownish; *thorax*, angles almost rounded: *elytra* yellowish white, with a common fuliginous disk; *feet* yellowish white; *tibiae* and *tarsi* darker.—Length three twentieths of an inch.

This occurred extremely numerous, in October, under the surface of the sand in flat places on the sea beach, over which the high tides flow. When the water subsides their labours become visible. They proceed forwards a little beneath the surface in a very irregular line, casting up the sand so as to resemble a miniature mole tunnel.

On the wet or partially dry plain, their tunnels, though very small, are yet very striking to the eye, in consequence of their great abundance, and being drier and whiter than the general surface. They appear to be in search of the various minute crustaceous animals, that take refuge in the sand on the recession of the waters.

4. O. *emarginatus*. Black; elytra whitish with a fuliginous suture. —Inhab. Indiana.

Body black, punctured; *head* with numerous, but not crowded punctures; two longitudinal indentations between the antennae: *antennae*, *mandibles* and *palpi* honey-yellow; *thorax* with a piceous tinge, rounded behind; with rather sparse, well defined punctures, and an obvious, impressed, dorsal line; *elytra* with separate punctures and a much dilated, common, fuliginous vitta; sutural tip very obtusely

rounded; *feet* honey-yellow; *thighs* and *coxae* whitish.—Length less than one tenth of an inch.

The obtusely rounded sutural tip of the elytra, gives this part, in repose, a profoundly emarginated appearance.

GENUS MOLOSOMA, *Say.*

Labrum entire; palpi filiform, terminal joint of the maxillaries much longer than the second, slightly attenuate to the tip; antennae before the eyes, inserted under the margin, gradually thicker at tip, four last joints larger; body cylindric; thorax truncate at base; abdomen with the penultimate segment longest; tibiae spinous, a little arquated.

M. *latipes*, Grav. (Monog. Coleopt. Micr., p. 198.)

In the present state of the science, the *latipes* can no longer remain in the genus Oxytelus, as a species of which Gravenhorst described it. That author was, however, perfectly sensible of its distinguishing characters, and had he written twenty years later, I should not now have to construct this new genus. The following are his remarks adjoined to his copious description, to which I must refer the reader:

"Cum hoc insectum palpis instructum sit filiformibus, antennis extrorsum crassioribus, thorace immarginato basi truncato, Tachinis adnumerandum foret, si solos characteres artificiales (Coleopt. Micropt., p. 134) datos respiceremus. Habitu autem toto, et, exceptis ultimis palporum articulis, partibus etiam singulis cum Oxytelis hujus familiae plane congruit. Certo systematis naturalis nullam haberemus rationem, cum hoc micropteron Tachinis adjungeremus. Oxytelus autem, sicut huc usque determinati erant, ob characteres per systema artificiale constitutos, haud adsociari potest. Eodem ergo jure, quo Astrapaei genus olim a Staphylino disjungebatur, quibus attamen simillimum est, hoc etiam insectum genus novum, ab Oxytelis separatum, conderet, nisi regula systematis naturalis, i. e. character totus externus seu habitus totus, dissuaderet."

ANTHOPHAGUS, *Grav.*

A. *verticalis.* Body reddish brown; elytra and margin of the tergum yellowish.—Inhab. Pennsylvania.

Body chestnut, punctured, a little hairy; *head* darker than the thorax, punctures sparse; disk of the vertex impressed; between the antennae unequal; *antennae* and *mouth* paler than the head; *thorax* convex, rounded each side, contracted at base, with a conspicuous impressed line, terminating behind in a dilated puncture; *elytra* reddish yellow, punctured, at tip obscure; *tergum* with a dorsal impressed line; posterior or rather lateral triangular yellow spot, and on the lateral margin of each segment; *thighs* testaceous; *tibiae* and *tarsi* somewhat darker.—Length under one fifth of an inch.

Allied to A. *brunneus*, Nob., but the segments of the tergum are not margined around by dusky; on each is a dusky triangle, much dilated on the posterior margin, so as nearly to reach the lateral edge.

OMALIUM, *Grav.*

1. O. *marginatum.* Piceous, punctured; antennae and feet dull rufous.—Inhab. Upper Missouri.

Body oblong oval, piceous, punctured; *head*, punctures sparse, obsolete at tip; with an indentation each side between the antennae and a longitudinal impressed line each side at base; *antennae* rufous at base, red brown obscure at tip with cinereous hair; *palpi* rufous; *thorax* transverse subquadrate, punctures not crowded; posterior edge obscurely piceous; *elytra* longitudinally quadrate, covering more than half of the tergum, exterior margin piceous towards the humerus; exterior hind angles rounded, sutural ones acute; almost to be traced into striae: *feet* piceous, paler towards the tip; *tergum* obscurely rufous on the margin, and on the posterior margins of the segments.—Length one tenth of an inch.

I obtained this insect when with Major Long's expedition to the Rocky Mountains; I think it occurred at Engineer Cantonment on the Missouri.

2. O. *rotundicolle*. Piceous black; thorax rounded behind, emarginate before.—Inhab. Pennsylvania.

Body with rather large, numerous and profound punctures; *antennae* piceous, brown, the three basal joints, *labrum* and *palpi* honey-yellow; *thorax* transverse oval, deeply emarginate before, equally punctured; posterior angles rounded; edges piceous; *elytra* equally punctured, long; terminal edge piceous; *tergum* piceous, rather paler on the posterior margins of the segments; *feet* dark honey-yellow; *venter* somewhat piceous.—Length less than one fifth of an inch.

Taken on the wing at twilight, in October.

TACHINUS, *Grav.*

1. T. *atricaudatus*, Nob. Very closely allied to *atricapillus*, and *cinctus*, Grav.

2. T. *obsoletus*. Black; thorax, curve on the elytra, segment margins and feet yellowish.—Inhab. Virginia.

Body black; *antennae* fuscous; four basal joints yellowish; tip of the last joint dirty fulvous; *mouth* honey-yellow; *thorax* honey-yellow; *elytra*, in some lights with an appearance of obsolete striae; subsutural impressed line obvious; a honey-yellow base, suture and terminal margin; *abdomen* with the segments piceous on their posterior margins; feet pale yellowish.—Length over one fourth of an inch.

I obtained this species in October, at Chinquotege Island.

3. T. *trimaculatus*. Yellowish; head and three elytral spots blackish; tergum rufous.—Inhab. Pennsylvania.

Body yellow, tinged with honey-yellow; *head* obscure piceous; *antennae* fuscous; four basal joints pale yellow; *mouth* yellow; *mandibles* piceous at tip; *thorax* immaculate; *scutel* piceous; *elytra*, with a few remote punctures on the basal half, and towards the tip obsolete impressed striae, a subsutural impressed line, near which is a series of distant larger punctures; region of the scutel with a dilated blackish triangle, extending to the middle of the length of the suture, and thence by a narrow and paler sutural line to the tip; exterior

margin or epipleura black, with a spot near its tip extending inwards, half way to the suture but not reaching the tip of the elytra; *tergum* dull sanguineous; near the tip with an obsolete, blackish band; at tip with a yellowish tinge.—Length over three twentieths of an inch.

4. T. *cincticollis*. Black; posterior thoracic margin, line of the elytra, and feet yellowish.—Inhab. Indiana.

Body black; *mouth* yellowish; *palpi* pale yellow; *antennæ* fuscous, three basal joints yellowish; fourth joint piceous; *thorax* posterior margin, and lateral margin dilating towards the posterior angles, honey-yellow; *scutel* piceous; *elytra* with an appearance of striæ at tip; a sutural impressed stria, near which is a series of distant punctures, and another near the middle and a submarginal one; pale yellowish, a dilated oval blued black spot extends from before the middle to the tip, does not attain to the suture and is confluent with a blackish marginal line, which does not reach the humerus; *tergum*, segments on their posterior margins, obscure piceous; *feet* pale yellow.—Length less than one fifth of an inch.

Distinguished from the others of this country, by the differently coloured thoracic margin.

5. T. *humidus*. Black; elytra and posterior margins of the abdominal segments, rufous.—Inhab. Indiana.

Body black; *antennæ* brownish, base and mouth honey-yellow; *thorax* piceous on the posterior edge; *elytra* rufous or honey-yellow, an impressed subsutural line, near which is a series of punctures, surface with sparse punctures almost to be traced into two or three series; sutural margin very slightly dusky; *tergum* blackish, with piceous posterior margins of the segments; tip somewhat fulvous; *feet* honey-yellow.—Length one tenth of an inch.

Allied to the preceding, but is a much smaller species, and the elytra are immaculate.

TACHYPORUS, *Grav.*

1. T. *fumipennis.* Black; margin of the thorax and base of the elytra yellowish.—Inhab. Pennsylvania.

Body minutely punctured; *head* black; *antennae* filiform, brown; four basal joints honey-yellow; *palpi* filiform, yellowish; *thorax* black, margined around with honey-yellow; *scutel* black; *elytra* fuliginous, a wide part of the base and narrow tip dull honey-yellow; *tergum* blackish, the segments piceous on the hind margins; beneath black-piceous: *feet* honey-yellow.—Length over three twentieths of an inch.

2. T. *moestus.* Piceous, sericeous; thorax and elytra margined with dull yellowish obscure.—Inhab. United States.

Body blackish piceous, somewhat sericeous; *mouth* and *antennae* dull yellowish; the latter pale brownish towards the middle; *palpi*, penultimate joint thick; last joint much shorter and acicular; *thorax* dilated, convex, lateral and basal margins dull yellowish; *elytra*, basal and exterior margins dull yellowish; *abdomen* somewhat hairy at tip, beneath honey-yellow; *feet* not or hardly spiny.—Length less than three twentieths of an inch.

The paler margins of the thorax and elytra are sometimes almost obsolete.

3. T. *jocosus.* Black; thorax, elytra, feet and mouth yellowish.—Inhab. Indiana.

Head black piceous, polished, convex, impunctured; *antennae* honey-yellow (six ultimate joints wanting in the specimen); *palpi* honey-yellow, terminal joint acicular; *thorax* polished, impunctured, yellowish: anterior and posterior margins blackish; *scutel* blackish; *elytra* yellowish, with very fine, prostrate hairs; region of the scutel blackish; *tergum*, posterior margins of the segments yellowish; longer than the elytra (in the preserved state); *feet* pale yellow.—Length one tenth of an inch.

4. T. *ventriculus.* Black; thorax each side and elytral margin piceous.—Inhab. Pennsylvania.

Body black, with a slight piceous tinge, polished; *antennae* dull

yellowish, dusky towards the tip; *mouth* dull yellowish; *palpi* filiform; *thorax* piceous on the lateral margin, gradually shading to the general blackish colour; *elytra* on the lateral margin and at tip piceous; common edge of the tip not indented at the suture; *tergum* (in the preserved state) much shorter than the elytra, at tip of the segments dull piceous; *feet* honey-yellow; *tibiae* not remarkably spiny. —Length one twelfth of an inch.

The abdomen contracts very much in desiccation.

This can hardly be the *crassus*, Grav., as his description does not indicate it.

5. T. *opicus*. Blackish; feet, base of the thorax and of the elytra obscure reddish brown.—Inhab. Missouri.

Body deep black brown, somewhat sericeous; *head* black; *antennae* at base and tip pale reddish brown; *palpi* pale reddish brown; *thorax* convex; a narrow, obscure, red brown posterior margin; *elytra* with a broad red brown basal margin; *feet* red brown; *tibiae* not remarkably spinous; *tergum* with paler margins to the segments, shorter than the elytra, hairy at tip.—Length over one tenth of an inch.

This species is not highly polished, but is distinctly sericeous.

6. T. *acaudus*. Abbreviated; honey-yellowish; thorax paler each side.—Inhab. Indiana.

Body honey-yellow, polished; *head* black piceous; *antennae* fuscous, four basal joints obscure yellowish; *palpi* yellowish, last joint acicular; *thorax* honey-yellowish, more dusky on the disk and at base, and paler, somewhat translucent on the lateral margin; *elytra* yellow with a rufous tinge, a little hairy, dusky on the region of the scutel; tip of the suture a little rounded, so as to produce an acute, but small, common emargination; *tergum* less than half the length of the elytra, blackish brassy, somewhat hairy; *feet* yellow, pale; *tibiae* with obvious, but not very prominent spines.—Length nearly one twelfth of an inch.

This is very broad in proportion to its length, in consequence of the great contraction of the abdomen in drying. It resembles *jocosus*, N., but is wider in proportion to its length, without taking into consideration the extraordinary brevity of the abdomen.

7. T. *faber*. Thorax and elytra yellowish; near the scutel depressed; last joint of the palpi very short.—Inhab. Indiana.

Body somewhat depressed; *head* black-piceous, polished; *antennae* yellowish towards the base; *palpi*, penultimate joint rather dilated; ultimate joint very short, conic, hardly one fourth as long as the preceding; *thorax* honey-yellow, glabrous; *scutel* small, dusky; *elytra* paler than the thorax, slightly hairy; suture and base near the scutel a little dusky; region of the scutel somewhat indented; *tergum* wider and more depressed than in most species, paler towards the tip; beneath reddish brown; *feet* yellowish; *tibiae* a little spinous.—Length about one twelfth of an inch.

The abdomen is more depressed than usual in this genus, and the terminal joint of the maxillary palpi is much shorter than in our other species.

Much reform seems requisite in this and the preceding genera.

8. T. *fimbriatus*, Grav. Varies in being more or less tinged with ferruginous. The head and thorax are sometimes entirely dull ferruginous. It is the *boleti* of Melsh. Catal., but it was afterwards first described by Gravenhorst under the name which I have of course adopted.

ALEOCHARA, *Grav.*

1. A. *obscuricollis*. Black; elytra ferruginous; tarsi piceous.—Inhab. Mexico.

Body black; *head* opaque; *labrum* piceous; *thorax* orbicular, truncated before for the reception of the head, opaque; *elytra* ferruginous, length hardly exceeding the breadth; *scutel* black, opaque; *abdomen* obviously hairy, polished, lateral edge somewhat elevated; *tarsi* piceous.—Length less than three tenths of an inch.

2. A. *bimaculata*, Grav.

A species very closely allied, or perhaps the same as the *bimaculata*, Grav., is an inhabitant also of Mexico.

3. A. *lustrica*. Blackish; thorax each side, elytra and feet dull rufous.—Inhab. Pennsylvania.

Body piceous black, obviously punctured; *head* black, with numerous punctures, sparse in front and more dense behind; before the antennae triangularly carinate, dull piceous; *antennae* dark reddish brown, three basal joints honey-yellow; *mouth* dull honey-yellow; *thorax* with very numerous punctures, rather larger towards the base and almost to be traced into transverse arquated lines; lateral margins piceous; *elytra* dull yellowish-rufous, with dense punctures; *abdomen* piceous at tip; *feet* honey-yellow.—Length under one fourth of an inch.

4. A. *fasciata.* Yellow; head, band of the elytra and spot on the tergum, black.—Inhab. Pennsylvania.

Body yellow, with a slight rufous tinge; *head* black piceous, with rather large punctures each side towards the eyes; *eyes* large, prominent; *mouth* dull yellowish; antennae at base pale yellow; *thorax* sparsely and unequally punctured, with four somewhat larger remote punctures on the disk; *elytra*, punctures small, not deeply impressed; posterior half blackish; *tergum* with a black dot near the tip; feet whitish.—Length about one twelfth of an inch.

This is the A. *fasciata* of Melsh. Catal.

5. A. *indentata.* Yellowish; head, thoracic disk, elytral spot and middle of the tergum, black.—Inhab. Pennsylvania.

Head not obviously punctured; *eyes* not remarkably large or prominent; *antennae* reddish brown, pale at base; *mouth* honey-yellow; *thorax* dull yellowish, dusky in the middle; a longitudinal impressed line, and an indentation on the middle of the base; *elytra* with small, numerous punctures; yellowish with the sutural edge and a triangular spot, extending from before the middle to the posterior outer angle, but not reaching the suture; *tergum* reddish yellow, the two middle segments blackish; *beneath* yellowish; *postpectus* and *middle of the venter* black; *feet* whitish.—Length one fifteenth of an inch.

Var. *a.* Thorax with the dusky disk obsolete.

Resembles the *dichroa*, Grav., in having the indentation on the

middle of the base, but it differs in many respects, and obviously in colouring.

6. A. 4-*punctata*. Thorax rufous, with four punctures placed transversely.—Inhab. Missouri and Indiana.

Head piceous black, with one puncture on the inner orbit, and three or four behind the eye; *antennae*, reddish brown, three basal joints honey-yellow; *palpi* piceous; *thorax* honey-yellow with four distant punctures before the middle, placed in a transverse line, the lateral ones less distinct; *elytra* dull honey-yellow, with minute punctures, having prostrate hairs; *tergum* piceous, paler towards the tip; *beneath* dark piceous; feet yellowish.—Length over one tenth of an inch.

The four punctures of the thorax is an obvious character.

7. A. *propera*. Blackish; thorax depressed on the posterior middle. —Inhab. Indiana.

Body with very numerous, small punctures, furnishing pale yellowish hairs; *antennae* black fuscous, three or four basal joints piceous; *mouth* piceous; *thorax* black piceous, conspicuously hairy; on the middle of the base indented; *elytra* piceous brown, obviously hairy, a little depressed on the basal margin and in the region of the scutel; *tergum* black; *feet* pale piceous.—Length over or about one tenth of an inch.

The depression, almost or quite amounting to an indentation at the base of the thorax is sometimes geminate.

8. A *semicarinata*. Blackish; thorax with a carina on the basal half.—Inhab. Missouri.

Body black with a piceous tinge: *thorax* with an elevated line, or two parallel impressed striae, from the middle to the base; *elytra* with a slightly impressed sutural groove on the basal half; *abdomen* black; feet pale piceous.

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1. The Head of the Maestricht Monitor of Cuvier, described in his Works, 'Ossemens fossiles, Vol. 5, p. 2, 3d edit. p. 31; but Cuvier finally adopted the Name of Mosasaurus given to it by Conybeare.
2. The almost entire Skeleton of the Plesiosaurus Dalicodeiris from the Cliffs of Lime Regis, Dorset Co., Great Britain.

Through the same medium of Dr Harlan:

M. David, Member of the Institute of France, presented to the Amer. Philosophical Society, a Colossal Bust in Plaster of Cuvier, inscribed 'A la Mémoire de Georges Cuvier, P. J. David.' This Bust was not made for sale.

Adams (John Quincy) A Collection of Minerals made by Andrew Armstrong, U. States' Resident at Lima.

Audubon (J. J.) Eleven Species of large Marine Shells from Florida.

Bloomfield (J. E.) Two Silver Vases used by the Priests of the Temple of the Sun, and a Cestus worn by a Virgin of the Sun at the Period of the Invasion of Peru by Pizarro.

Brown (Fred.) A Peruvian Ewer of Antique Form found at Huaco.

Brown (P. A.) A Fac-simile in Plaster of 2 Letters found in the middle of a Stone when sawed.

—— A Plate, being the Profile of the Rocks between Philadelphia and Norristown, surveyed by him.

Burroughs (Marmaduke—M.D.) A very valuable and numerous Collection of Huacaros, or Indian Antiquities, from the Cemeteries of the Ancient Peruvians, collected principally from the Neighbourhood of Truxillo in Lower Peru, and from Arica and Quilca in Upper Peru. Also a very large and interesting Collection of fabrics from the Philippine Islands, Alsam and other Parts of Asia, comprising Manufactures from the Manilla Hemp, Leaf of the Pine Apple, &c. by the Natives of those Parts. Also Specimens of the Essential Oils of Croton and Camphor from the East Indies.

Bry (H.) Some Fossil Bones found near Washita, 50 Miles from the Town of Monroe, described in this Vol., with a Plate.

—— A Specimen of Silk Cloth manufactured by Silk Worms on a Plane Surface instead of Cocoons.

Cass (Lewis) A Specimen of Salt, 2 inches by $2\frac{1}{2}$, cut out of a Mass of Salt in a Brick at the Head of Arkansas, in which a Channel had been worn in the Salt Rock.

Coles (Edw.) Various Specimens of Lead and Copper Ore from Illinois, Missouri, and N. W. Territory.

D'Homergue (J.) A Cast, coined 1791, before the Establishment of the Mint (1792), with a Head of Washington. N.B. This was presented as a Model but rejected.

Du Ponceau (P. S.) Fragments of Egyptian papyrus, found by an American Officer among the Ruins of Thebes; the writing in the Demotic character.

Fairman, Draper, Underwood, and Co., Specimen Sheets of Bank Note Engravings, Busts, Vignettes, &c.

Harlan (Richard—M.D.) Several Specimens of Indian Pottery. One very large from Kentucky, the rest from Peru.

Hodgson (W. B.) A Girdle of a Berber Female.

Humphreys (Sterne, Lt. U. S. Navy) A Collection of very interesting Articles collected by him when on Board the St Louis on the Coast of America and Pacific Ocean:—Ancient Pottery from Huaco, Minerals from Cobija, Shells, Dresses, War Implements, Paddles of curious Workmanship, from Feejee Islands and Marquesas.

Jones (Wm.) Collec. des Gravures des Tableaux d'après l'Ecole Ital. contenus dans le Musée Napoleon, avec Description, par J. Griffith. Paris, 1806.

Keaff ( ) Collection of Copper Ores from Perkoiming.

La Roche (R.—M.D.) A Specimen of Calcareous Deposit from the Tartarian Lake, 12 Miles from Rome.

Martinez (J. J.) MSS. Chart of his Survey of the N. W. Coast of Cuba, between Havana and Cape Antonio.

Mease (James—M.D.) A Collection of Minerals from the Serra de Pasco Mines of Peru.

Meigs (C. D.—M.D.) Human Bones found in Brazil, described in the Transactions of the Soc., Vol. 3. New Series.

Middleton (Henry) Two Russian Coins of Platina, value 3 and 6 rubles.

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—— A New Map of Hungary on a large Scale.

—— A Map of the Moon (Desmond), with a Description of Size, Mountains, &c. in German, with Marks and References.

Parker (General Daniel) Plan of New York by Longstreth.

—— Survey of the Isthmus of Cape Cod (Mass.) and the Town of Sandwich, with a Profile of the proposed Route for a Canal between Buzzard and Barnstable Bays.

—— Survey of Valley and Pond auxiliary to the above Survey.

The above surveyed by J. A. W. Smith and F. Searle of U. States Artillery.

—— A Map of the Country between Washington and Pittsburgh, with reference to the Ohio and Chesapeake Canal Route and Profile, 1826, by Lt Farley, from general Map in Engineer Department.

—— Routes examined between N. Orleans and Washington, with a View to a National Road.

—— Original Pencil Portrait of Zaccheus Collins, late Vice Pres. of the Society, by Longacre. This last deposited.

Poussin (Wm. Tell) Survey of a Route for a Canal between the Gulf of Mexico and the Atlantic Ocean. Surveyed by Gen. Bernard and W. T. Poussin, by Order of the United States. Wash. Feb. 1830.

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Zollikoffer (Wm.—M.D.) Specimen of Sewing Silk, in Maryland, from Cocoons produced by Worms fed entirely from Lettuce Leaves.

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